NA
1
I55
SLRA

FRANKLIN INSTITUTE LIBRARY
PHILADELPHIA, PA.

Class 720.5 Book In57 Accession 14049

REFERENCE

ARTICLE V.—The Library shall be divided into TWO CLASSES; the first comprising such works as, from their rarity or value, should not be lent out, all unbound periodicals, and such text books as ought to be found in a library of reference except when required by Committees of the Institute, or by members or holders of second class stock, who have obtained the sanction of the Committee. The second class shall include those books intended for circulation.

ARTICLE VI.—The Secretary shall have authority to loan to Members and to holders of second class stock, any work belonging to the SECOND CLASS, subject to the following regulations:

Section 1.—No individual shall be permitted to have more than *two books* out at one time, without a written permission, signed by at least two members of the Library Committe; nor shall a book be kept out more than TWO WEEKS; but if no one has applied for it, the former borrower may renew the loan. Should any person have applied for it, the latter shall have the preference.

Section 2.—A FINE OF TEN CENTS PER WEEK shall be exacted for the detention of a book beyond the limited time; and if a book be not returned within three months it shall be deemed lost, and the borrower shall, in addition to his fines, forfeit its value.

Section 3.—Should any book be returned injured, the borrower shall pay for the injury, or replace the book, as the Library Committee may direct; and if one or more books, belonging to a set or sets, be lost, the borrower shall replace them or make full restitution.

ARTICLE VII.—Any person removing from the Hall, without permission from the proper authorities, any book, newspaper or other property in charge of the Library Committee, shall be reported to the Committee, who may inflict any fine not exceeding twenty-five dollars.

ARTICLE VIII.—No member or holder of second class stock, whose annual contribution for the current year shall be unpaid or who is in arrears for fines, shall be entitled to the privileges of the Library or Reading Room.

ARTICLE IX.—If any member or holder of second class stock, shall refuse or neglect to comply with the foregoing rules, it shall be the duty of the Secretary to report him to the Committee on the Library.

ARTICLE X.—Any Member or holder of second class stock, detected in mutilating the newspapers, pamphlets or books belonging to the Institute shall be deprived of his right of membership, and the name of the offender shall be made public.

THE INLAND ARCHITECT AND NEWS RECORD

CONTENTS

Volumes XXI and XXII

FEBRUARY 1893 JANUARY 1894

INLAND PUBLISHING CO.
PUBLISHERS
TRIBUNE BUILDING
CHICAGO

CONTENTS.

VOL. XXI.

AGREEMENT: PAGE
Contractors' and Architects' 2
Chicago Carpenters'..... 15

AIR:
Vitiation of..... 62

ART:
Man and His 24

ART AND ARCHITECTURE:
Columbian Exposition..... 32

ARCHITECTS:
World's Congress of.....32, 67

ARCHITECTURE:
Columbian Exposition, at..... 72
Italy, in..... 62
Political Methods Ruin American 68

ARCHITECTURAL ASSOCIATIONS:
American Institute, Changes in Directory.. 1
American Institute, a New Secretary 1
Supervising Architect's Office Bill..... 27
American Institute of Architects..... 40
American Institute, Twenty-Seventh Annual Convention 43, 67
Edinburgh 39

ARCHITECTURAL PERSPECTIVE:
Direct Methods in 3, 21, 33, 45, 57, 69

ARCHITECTURAL PROFESSION:
Legal Status for the..... 19

ARCHITECTURAL PROGRESS:
After Ten Years..... 5

ARCHITECTURAL SCHOOL:
Chicago Art Institute 40

ASSOCIATIONS:
Brooklyn Institute..... 63

AUTHORS:
Gnastavino, R. 51
Hazel, W. A..... 50
Illsley, C. E..... 3, 21, 45, 57, 69
Jenney, W. L. B..... 34
Pond, Irving K..... 24
Wight, P. B. 5
Willett, J. R. T.....5, 47, 73

BUILDERS: PAGE
National Association, Seventh Annual Convention 1
Proceedings of..... 6

BUILDING ORDINANCE:
Chicago, New 20
Revision of 27

BUILDING:
Outlook.....17, 64

BUILDING NEWS:
Synopsis of.....17, 29, 41, 53, 64, 77

CASTS:
Trocadero 14

CHAPTERS A. I. A.:
Chicago..... 51
Kansas City.....28, 40, 63, 76
Southern A. I. A., Proceedings of Second Annual Convention..... 12

COLUMBIAN EXPOSITION:
Architectural Study, An 55
Architecture, Talk On, at 34
Art and Architecture..... 32
Art Section of Congress Auxiliary 44
Cameras at 44
Cost to See the 38
Chiefs Resign..... 67
Report of Finances..... 68
Sanitary Privilege, Abuse of 56

COMPETITION:
Advertisement in New York *Herald*..... 44
Applied to Government Buildings..... 20
Bridge, at St. Petersburgh..... 14
Lorient, at..... 15
Davenport City Hall 20

COMPETITION PLANS:
Architects' Volunteer..... 20

ENGINEERS AND ARCHITECTS:
Louisville, Club..... 39

EXCAVATIONS:
Delphi, at..... 15

FIREPROOFING:
Development of..... 51

HEATING AND VENTILATION: PAGE
Residences, of.....35, 47, 60, 73

MEDAL:
Richard M. Hunt, to.....20, 43
Robert Clark..... 73

MORTAR:
Making by Machinery..... 19

OBITUARY:
Auchmuty, R. T..... 67

OBSERVATORY:
Mount Blanc, at..... 14

OLD BUILDINGS:
Destruction of, in the Provinces..... 15

PUBLICATIONS:
Logarithmic Tables..... 63
Norman Monuments of Palermo..... 63
Practical Paperhanging. 28
Pumping Machinery..... 63
Freehand Lettering for Working Drawings 28

REGISTRATION:
Architects, of..... 56

RETROSPECTIVE:
INLAND ARCHITECT, THE..... 19

SKETCH CLUBS:
Chicago Architectural.....15, 27, 40
Denver, Architectural, Annual Meeting of.. 39
New York.....15, 27, 39, 63

STAINED GLASS:
Architectural, Adjunct, an..... 50

STATUE:
Columbus, at Chicago..... 56

SUPERVISING ARCHITECT:
Blunder in Office..... 31

THEATER DISASTER:
Ford's..... 55

TIMBER TEST:
By Government..... 32

UNION:
Chicago Carpenter Contractors' Agreement with..... 1

VOL. XXII.

ARCHITECT:
Was Shakespeare an?..... 36

ARCHITECTS:
Examinations, Necessity for..... 41
World's Congress of, at Chicago 1 10

ARCHITECTURE:
Chicago School of..... 47

ARCHITECTURAL ASSOCIATIONS:
Directors' Meeting, American Institute.....41, 56
Proceedings, Convention American Institute, Twenty-seventh Annual..... 1, 9

ARCHITECTURAL PERSPECTIVE:
Direct Methods in..... 36, 43, 53

ARCHITECTURAL PRACTICE:
Government..... .....33, 41, 52

ARCHITECTURAL SCHOOL:
At Chicago Assured..... 1

ART:
Opening of Chicago Art Institute..... 47

AUTHORS:
Burnham, D. H..... 5
Gaudet, J..... .....28, 45
Illsley, C. E..... .....34, 43, 53
Payne, H. C..... .....4, 15, 35
Shankland, E. C..... 8
Wight, P. B..... 27

BUILDERS:
National Association — Eighth Annual Convention of..... 55

BUILDING LINE:
Which is the? 58

BUILDING MEMORIAL:
Need for an Artists'..... 51

BUILDING NEWS:
Synopsis of..... .....12, 24, XX, 41, 49, 62

BUILDING:
Why Capital Should Invest..... 14
Outlook 12, 24, 62

CHAPTERS A. I. A.:
Illinois, Museum Movement by..... 14
Minnesota 58
St. Louis..... 31
Western New York State Annual Convention 29

COLUMBIAN EXPOSITION:
Appointment of General Manager for..... 34
Architecture at 3, 16
Architectural Superiority 1
Awards at 26, 27
Construction of Buildings, etc..... 8
German Architecture at..... 34
Inland Architect's Photogravure Illustrations..... 51
Interesting Exhibits at..... 21
Landscape Architecture at.....13, 18
Museum Project, A 13, 27, 34
Organization of..... 5
Painting and Sculpture at..... .....4, 15, 35
Phenomenal Attendance..... 26
Photography, Disappointing Results in 34
Resignation of Director of Works and Director of Color..... 33
Sulphur, Loss of, at..... 52
Workingmen's Model Houses at..... 27
Buildings, Impossibility of Preserving 34

COMPETITION:
How American Institute Approached Problem 56
Milwaukee Library.....51, 57
Public..... .....28, 45
Robert Clark Medal 46

ELECTRIC CARS:
System Unpopular in Chicago 26

EXHIBITION:
Architectural League of New York—Ninth Annual 27

FAIENCE:
Architectural XX

HARDWARE:
Builders'..... 41

HOLIDAY:
Christmas Only Universal..... 42

ILLUSTRATIONS:
World's Fair, in INLAND ARCHITECT.. 1

LEGAL:
Decisions 61

ORNAMENTATION:
Popular..... 54

PUBLICATIONS:
Architectural Sketches..... 40
Compound Riveted Girders 59
Elements of Shades and Shadows for Architectural Students 59
Funk & Wagnalls Dictionary..... 59
Handbook of Ornament..... 32
How to Frame a House..... 40
Ornamental Iron 32
Practical Treatise on Foundations, A..... 59

SCHISIOPHONE:
The..... 54

SKETCH CLUBS:
Architectural League of New York.....31, 58
Chicago Architectural..... 31
Denver Architectural... 58
New York, of..... 31

THEATERS:
Dangerous Construction of Country 14

ILLUSTRATIONS.

VOL. XXI.

ILLUSTRATIONS—

APARTMENT BUILDING:
Architects Patton & Fisher.....March
Architect F. W. Perkins.....March

CATHEDRAL:
Architect C. A. Tenbusch.....April

CHAMBER OF COMMERCE (COMPETITION):
Accepted Design, Architects Spier & Rohns, Mason & Rice, John Scott & Co., W. S. Joy, Rogers & McFarlane, Mortimer L. Smith & Son, E. T. McDonald.....May

CHURCH:
Architect W. J. East.....June
Architect F. R. Watson.....July
Denver Sketch Club Competition, Harvey Pridham.....June

COLLEGE (AGRICULTURAL):
Architects Josselyn & Taylor.....July

COLLEGE (DENTAL):
Architects Willett & Pashley.....July

COLUMBIAN EXPOSITION:
British Building, Victoria House, Architect Colonel Edis.....July
California State Building, Architect A. Page Brown.....July
Castle in German Village, Architect Carl Hoffaker.....Jan.
Choral Building, Architect F. M. Whitehouse.....March
Cross Section Manufactures Building, George B. Post.....May
Details of Mount Vernon Virginia State Building, Measured Drawings by Architect E. S. Rogers.....April
Festival Hall, Architect F. M. Whitehouse.....June
German Headquarters Exhibition Building, Views from Northeast and Southeast, Architect Johannes Radka.....July
Iowa Building, Architects Josselyn & Taylor Compauy.....July
Transportation Building, Maiu Entrauce.June

CONVENT:
Architect C. F. Schweinfurth.....July
Architect G. A. Tenbusch.....July

COTTAGE:
Architects Poud & Pond.....May

COURTHOUSE:
Architect Otto Matz.....March

DESIGN OF WINDOW:
G. E. Androvette & Co.....April

DESIGNS (FURNITURE):
Stephen M. Wirts.....June

ENTRANCE:
Architect J. M. Van Osdel.....March

FLATS:
Architect E. A. Kent.....Feb.

FOUNTAIN:
Architectural League of New York Competition.....Feb.

HIGH SCHOOL:
Architects Patton & Fisher.....April

HOTEL:
Architects Burnham & Root.....March
Architects Patton & Fisher.....March

HOUSE:
Architect E. A. Kent.....April
Architect G. W. Maher.....July
Architect J. L. Silsbee.....July
Architects Eames & Young.....Jan.
Architect G. W. Maher.....Nov.

HOUSES:
Architect E. G. W. Dietrich.....April
Architects J. Tyler & Son.....March

MARKET HALL:
Architect S. S. Beman.....Feb.

MUSEUM:
Architect Henry Ives Cobb.....Feb.

OFFICE BUILDING:
Architect Charles S. Frost.....Feb.
Architect J. W. McLaughlin.....July
Architect George W. Rapp.....March
Architects Shepley, Rutan & Coolidge.....June
Architect Frank R. Watson.....April

OPERA HOUSE:
Architects Adler & Sullivan.....March

RAILWAY STATION:
Architect Charles S. Frost.....Juue
Architects Van Brunt & Howe.....March
Denver Sketch Club Competition.....Feb.

RESIDENCE:
Architects W. W. Boyington & Co.....Juue
Architect William D. Cowles.....June
Architects McCurdy & Pulis.....July
Architect S. T. McClarren.....March
Architects Patton & Fisher.....July
Architect Fred W. Perkius.....Feb.
Architect Fred D. Perkius.....Juue
Architect C. F. Schweiufurth.....July
Architect Charles F. Whittlesey.....April

RESIDENCE (INTERIOR):
Architect J. W. McLaughlin.....July

RESIDENCE (REMODELED):
Architects Paul Starrell & Jules F. Wegman.....May

RESTAURANT (EXTERIOR AND INTERIOR):
Architects Pond & Pond.....July
Architects H. C. Koch & Co.....April

SCHOOLS:
Architects Crapsey & Brown.....June

SKETCHES:
Alma Tadema, Residence of.....May
Chateau de Josselyn, J. W. Krause.....April
Church Tower and Old House, John Johnson.....June
Frank A. Hayes.....Feb.
House of Henry IV from Photograph, E. C. Jeusen.....May
Illustrating C. E. Illsley's Article on "Direct Perspective"; Metropolitan Opera House, New York; the Propylæum, Munich; Spanish Hall, Imperial Palace, Prague.....June
J. F. Jackson, by.....Feb.

SKETCHES (FOREIGN):
L. F. Plympton.....March
Screen, Oscar Tolhurst.....April

SPECTATORIUM:
Architects Jenney & Mundie.....April

TERRACE:
Architect E. C. Van Leyden.....July

TURNER HALL:
Architects Flanders & Zimmerman.....Feb.

ILLUSTRATIONS (PHOTOGRAVURE)—

ACADEMY:
Architects Pond & Poud.....April

ADDITION TO RESIDENCE:
Architects Mason & Rice.....Feb.

BOWLING ALLEY:
Architect G. W. E. Field.....May

CHAPEL:
Architects Holabird & Roche.....May

CHURCH:
Architects Burnham & Root.....April
Architect John G. Cairus.....June
Architect John Lyman Faxon.....Feb.

CLUBHOUSE:
Architects Pond & Pond.....June

CLUBHOUSE (INTERIOR):
Architects Pond & Pond.....June

COLUMBIAN EXPOSITION:
Clock, A. Sandier.....July
Fine Arts Building; center south front, Architect Charles B. Atwood.....July
Idaho State Building, Architects Cutter & Poetz.....July
New York State Building, Architects McKim, Mead & White.....July
Norwegian Building, Architect W. Hansteen.....July

COTTAGE:
Architect G. W. E. Field.....May
Architect G. W. E. Field.....March

DETAIL (OFFICE BUILDING):
Architects Adler & Sullivan.....Feb.

DORMITORY:
Architects Pond & Pond.....May

ENTRANCE:
Architect Henry Ives Cobb.....March

ENTRANCE GATE:
Architect T. C. Link.....May

FIRE DEPARTMENT HEADQUARTERS:
Architects Donaldson & Meier.....Feb.

FIRE ENGINE HOUSE:
Architects Donaldson & Meier.....March

HALL:
Old Independence, Philadelphia.....Feb.

HOUSES:
Architects Burnham & Root.....April

INSTITUTE:
Architects Patton & Fisher.....March

INTERIOR (DRAWING-ROOM):
Architect G. W. Lee.....Feb.

LAUNDRY BUILDING:
Architect G. W. E. Field.....March

LIBRARY:
Architect Henry Ives Cobb.....March

MAIL CHUTE:
Architect J. G. Cutler.....Feb.

MEDICAL SCHOOL:
Architects Eames & Youug.....May

RAILWAY STATION:
Architect S. S. Beman.....April

RESIDENCE:
Architect D. H. Burnham.....April
Architects Raeder, Coffin & Crocker.....Feb.
Architect E. G. W. Dietrich.....Juue
Architect E. G. W. Dietrich.....June
Architects Eames & Young.....May
Architects Eames & Young.....June
Architects Eames & Young.....June
Architects Eames & Young.....June
Architect Charles S. Frost.....April
Architects Grable & Weber.....June
Architects Samuel Hannaford & Sons.....March
Architects Pond & Pond.....April
Architects Rossiter & Wright.....June
Architects John Scott & Co.....March
Architect J. L. Silsbee.....Feb.
Architect F. M. Whitehouse.....April

RESIDENCES:
Architects Rogers & McFarlane.....Feb.

STUDIO BUILDING:
Architects Eames & Youug.....May

14059

ILLUSTRATIONS.

VOL. XXII.

ILLUSTRATIONS—

ACADEMY OF SCIENCES:
Architects Patton & Fisher ..... Sept.

APARTMENT BUILDING:
Architect Charles S. Frost ..... Feb.

ART INSTITUTE:
Architects Shepley, Rutan & Coolidge ..... Dec.

BANK:
Architects Eames & Young ..... Jan.
Architects Jenney & Mundie ..... Nov.

BARN:
Architects Willett & Pashley ..... Dec.

BOAT HOUSE:
Architects Conover & Porter ..... Nov.

CHURCH:
Architect D. P. Clark ..... Nov.
Architects Dittoe & Wisenall ..... Dec.
Architects Schlacks & Otteuheimer ..... Nov.

CLUB:
Architects Wing & Mahurin ..... Nov.

COLLEGE:
Architects Thompson & Gebel ..... Aug.

COLUMBIAN EXPOSITION:
Austrian Section, Main Entrance ..... Sept.
Ceylon Building ..... Sept.
Decoration of Dome of Administration Building ..... Dec.
Detail Bas-relief, Sculptor John J. Boyle ..... Sept.
Fountain, Sculptor MacMonnies ..... Sept.
German Building (three views), Architect Johannes Radke ..... Dec.
Grand Basin, Peristyle, Court of Honor, Electricity Building, MacMonnies' Fountain, Manufactures Building, Interior Terminal Station, Maine State, German Village, Entrance to Horticultural, South Basin, etc., Photographs by F. D. Todd ..... Aug.
Portrait of D. H. Burnham ..... Sept.
Russian Court Exterior, Architect Petrovo Ropett ..... Jan.
Statuary Sculptor, Carl Bitter ..... Sept.
Statuary Sculptor, Philip Martiny ..... Sept.
Statuary Sculptor, Philip Martiny ..... Sept.
Statuary Sculptor, M. A. Waagen ..... Sept.
Statuary Sculptor, M. A. Waagen ..... Sept.
Texas State Building, Architects Gordon & Lamb ..... Sept.
View South toward Administration Building ..... Sept.
View toward South Screen ..... Sept.
Washington State Building ..... Sept.
Workingmen's House ..... Oct.
Workingmen's House ..... Oct.

COTTAGE:
Architects Stone, Carpenter & Wilson ..... Oct.

COTTAGES:
Architect Ulysses G. Orr ..... Oct.

COURTHOUSE:
Architects La Belle & French ..... Dec.

GATE LODGE:
Architect E. C. Van Leyden ..... Nov.

HIGH SCHOOL:
Architects Josselyn & Taylor ..... Aug.

HOUSE:
Architect F. T. Cornell ..... Dec.
Architect Manly N. Cutter ..... Nov.
Architect Manly N. Cutter ..... Oct.

MAUSOLEUM:
Architects Hogg & Rose ..... Aug.

MISCELLANEOUS:
Architects Yost & Packard ..... Oct.

OFFICE BUILDING:
Architect C. H. Blackall ..... Oct.
Architects Holabird & Roche ..... Nov.
Architects Holabird & Roche ..... Dec.

PUBLIC LIBRARY:
Architect S. S. Beman ..... Nov.
Architects Ferry & Clas ..... Jan.
Architects H. C. Koch & Co ..... Jan.

RESIDENCE:
Architects Barnett, Hayes & Barnett ..... Jan.
Architect Manly N. Cutter ..... Jan.
Architect A. O. Elzner ..... Aug.
Architects Hapgood & Hapgood ..... Aug.
Architect G. W. Maher ..... Dec.
Architect E. A. Manny ..... Nov.
Architect E. A. Manny ..... Nov.
Architect W. A. Otis ..... Aug.
Architect George W. Rapp ..... Aug.
Architect E. C. Van Leyden ..... Nov.
Architect J. M. Van Osdel ..... Jan.
Architect E. C. Van Leyden ..... Jan.
Architects Willett & Pashley ..... Oct.
Architects Willett & Pashley ..... Dec.

RESIDENCES:
Architect E. C. Van Leyden ..... Jan.
Architect Manly N. Cutter ..... Dec.

SCHOOL:
Architects Dwight L. Perkins and George W. Selby ..... Nov.
Architects Thompson & Gibel ..... Aug.
Architects Wing & Mahurin ..... Aug.

SKETCHES:
Colonial Doorway, Bryant L. Schaeffer ..... Jan.
Chateau de Chaumont, J. W. Krause ..... Oct.
Entrance to the Alamo, A. Leveriug ..... Dec.
Grotesques, L. F. Plympton ..... Aug.
House, W. Cowe ..... Oct.

STABLE:
Architects Jenney & Mundie ..... Oct.

STORE:
Architect E. C. Van Leyden ..... Aug.

UNIVERSITY:
Architect Henry Ives Cobb ..... Aug.

WAREHOUSE:
Architect A. O. Elzner ..... Aug.

ILLUSTRATIONS (PHOTOGRAVURE)—

APARTMENT BUILDING:
Architects Pond & Pond ..... Nov.
Architects Pond & Pond ..... Jan.

CLUB (ADDITION):
Architects Adler & Sullivan ..... Nov.

COLUMBIAN EXPOSITION:
Administration Building, East Entrance, Architect R. M. Hunt ..... Sept.
Agricultural Building, North Entrance, Architects McKim, Mead & White ..... Aug.
Black Forest Farmhouse, Architect Carl Hoffaker ..... Jan.
Decoration of Dome of Administration Building ..... Dec.
Decoration of Dome of Fine Arts Building ..... Dec.
East India Pavilion, Architect Henry Ives Cobb ..... Oct.
Electricity Building, South Entrance, Architects Van Brunt & Howe ..... Oct.
Exhibition Building, Walter Baker & Co., Architects Carrere & Hastings ..... Sept.
Exhibition Building, N. Y. C. & H. R. R. R., Architect Bradford L. Gilbert ..... Sept.
Fisheries Building, North Entrance, Architect Henry Ives Cobb ..... Nov.
Fisheries Building, South Entrance ..... Aug.
French Asiatic Colonies Building ..... Jan.
French Court Façade, Architect René Dubuisson ..... Aug.
German Court, Interior, Architect Carl Hoffaker ..... Dec.
Hessian Town Hall, Architect Carl Hoffaker ..... Sept.
Homœopathic Headquarters, Architect P. B. Wight ..... Aug.
Horticultural Building, East Entrance, Architects Jenney & Mundie ..... Oct.
Japanese Palace, North Wing, Architect M. Kuru ..... Oct.
Machinery Building, North Entrance, Architects Peabody & Stearns ..... Sept.
Manufactures Building, West Entrance, Architect George B. Post ..... Aug.
Massachusetts State Building, Architects Peabody & Stearns ..... Oct.
Memorial Arch of Peristyle, Architect Charles B. Atwood ..... Aug.
Memorial Monument, Architects Peabody & Stearns ..... Dec.
Merchant Tailors' Building, Architect S. S. Beman ..... Jan.
Minaret in Cairo Street, Architect Max Herz ..... Dec.
Mines Building, South Entrance, Architect S. S. Beman ..... Sept.
New York State Building, South Front, Architects McKim Mead & White ..... Sept.
Ohio State Building, Architect J. W. McLaughlin ..... Oct.
Portrait Group of Director of Works and Staff ..... Dec.
Refectory for Van Houten Company, Architect P. S. Weber ..... Oct.
Sculpture, Sculptor Carl Bitter ..... Sept.
Statue of Columbus, Sculptor A. St. Gaudens ..... Sept.
Sweden Headquarters ..... Aug.
Tiffany Exhibit, Architect John Dufais ..... Dec.
Upper Bavarian Farmhouse, Architect Carl Hoffaker ..... Sept.
Wrought-Iron Gates, Architect Carl Hoffaker ..... Dec.

DORMITORY:
Architect R. M. Hunt ..... Nov.

ENTRANCE:
Architect Henry Ives Cobb ..... Jan.

HOUSES (SEMI-DETACHED):
Architect Henry Ives Cobb ..... Jan.

RESIDENCE:
Architect F. M. Whitehouse ..... Nov.
Architect Henry Ives Cobb ..... Nov.
Architect Wilson Eyre ..... Jan.
Architect Wilson Eyre ..... Jan.
Architect Wilson Eyre ..... Jan.
Architect L. G. Halberg ..... Nov.

THE INLAND ARCHITECT AND NEWS RECORD

Vol. XXI. FEBRUARY, 1893. No. 1



A Monthly Journal Devoted to

ARCHITECTURE,

CONSTRUCTION, DECORATION AND FURNISHING

IN THE WEST.

PUBLISHED BY THE INLAND PUBLISHING CO.,
19 Tribune Building, Chicago, Ill.

L. MULLER, Jr., Manager. ROBERT CRAIK McLEAN, Editor.
C. E. ILLSLEY, Associate Editor.

SPECIAL CONTRIBUTORS:

DANKMAR ADLER,	D. H. BURNHAM,	W. L. B. JENNEY,
HENRY VAN BRUNT,	P. B. WIGHT,	IRVING K. POND,
WM. PAUL GERHARD,	LOUIS H. SULLIVAN,	ALLEN B. POND.

TERMS: Regular number, $5 a year; Photogravure edition, $10 a year. Single copies, Regular number, 50c.; Photogravure edition (including 7 photogravures), $1. Advance payment required.

The columns and illustration pages of THE INLAND ARCHITECT are open to all alike, merit and availability only determining what shall be published. Contributions appropriate to its pages are always desired.

AMERICAN INSTITUTE OF ARCHITECTS.

OFFICERS FOR 1893:

PRESIDENT . . . . EDWARD H. KENDALL, New York, N. Y.
SECRETARY . . . . ALFRED STONE, Providence, R. I.
TREASURER . . . . SAMUEL A. TREAT, Chicago, Ill.

VICE-PRESIDENTS:

FIRST VICE-PRESIDENT . . DANIEL H. BURNHAM, Chicago, Ill.
SECOND VICE-PRESIDENT . HENRY VAN BRUNT, Kansas City, Mo.

BOARD OF DIRECTORS:

For three years.

Theophilus P. Chandler, Jr., Phila., Pa.	Joseph F. Baumann, Knoxville, Tenn.
George W. Rapp, Cincinnati, Ohio.	P. P. Furber, St. Louis, Mo.
William G. Preston, Boston, Mass.	R. W. Gibson, New York, N. Y.
*W. W. Clay, Chicago, Ill.	C. H. Johnson, St. Paul, Minn.

For two years.

*Richard M. Hunt, New York, N. Y.	C. F. McKim, New York, N. Y.
E. M. Wheelwright, Boston, Mass.	William Worth Carlin, Buffalo, N. Y.
*James W. McLaughlin, Cincinnati, O.	S. S. Beman, Chicago, Ill.
William S. Eames, St. Louis, Mo.	William C. Smith, Nashville, Tenn.

For one year.

W. M. Poindexter, Washington, D. C.	*George B. Ferry, Milwaukee, Wis.
C. J. Clark, Louisville, Ky.	George C. Mason, Jr., Philadelphia.
Levi T. Scofield, Cleveland, Ohio.	E. F. Fassett, Portland, Me.
M. J. Dimmock, Richmond, Va.	A. W. Longfellow, Boston, Mass.

*These, with President, Secretary and Treasurer ex-officio, form Executive Committee.

STANDING COMMITTEES FOR 1893:

Committee on Foreign Correspondence.—Richard M. Hunt, chairman, New York, N. Y.; William Le Baron Jenney, Chicago, Ill.; R. S. Peabody, Boston, Mass.; C. F. McKim, New York, N. Y.; Henry Van Brunt, Kansas City, Mo.

Committee on Education.—Henry Van Brunt, chairman, Kansas City, Mo.; Professor William R. Ware, New York, N. Y.; Professor N. Clifford Ricker, Champaign, Ill.; A. W. Longfellow, Boston, Mass.; Theophilus P. Chandler, Jr., Philadelphia, Pa.

Committee on Uniform Contract.—Samuel A. Treat, chairman, Chicago, Ill.; William Worth Carlin, Buffalo, N. Y.; Alfred Stone, Providence, R. I.

Committee upon Conservation of Public Buildings.—Richard Upjohn, chairman, New York, N. Y.; Presidents of the several Chapters.

Committee on Competition Code.—Charles E. Illsley, chairman, St. Louis, Mo.; J. W. Yost, Columbus, Ohio; J. G. Cutler, Rochester, N. Y.

Place of next Convention, Chicago, August, 1893.

Official Changes in the Institute.

The recent meeting of the board of directors of the American Institute of Architects brought several important changes in the organization of its board of officers and the standing committees. This was largely in consequence of the resignation of Dankmar Adler, who has been so efficient a secretary since the death of Mr. Root and the consequent appointment of Alfred Stone, of Providence, Rhode Island. The new executive committee is formed of the president, secretary, and treasurer, *ex-officio*, and W. W. Clay, Richard M. Hunt, J. W. McLaughlin, and George B. Ferry, of the board of directors; and Theophilus P. Chandler, of Philadelphia, takes Mr. Stone's place in the directory. In the standing committees, R. S. Peabody takes the place of Mr. Adler in the Committee on Foreign Correspondence. The Committee on Education is now composed of Henry Van Brunt, chairman; William R. Ware, N. Clifford Ricker, A. W. Longfellow, and T. P. Chandler. In the Committee on Uniform Contract, William Worth Carlin takes Mr. Adler's place. The special committees of the year are upon the revision of the constitution and by-laws, consisting of George B. Ferry, Charles E. Illsley, and R. W. Gibson, and the revision of the schedule of professional charges, which is in the hands of W. G. Preston, W. W. Clay and W. C. Smith. On the whole the changes have been effected without loss of inertia in the progress of Institute affairs, and above all the Association is to be congratulated upon the acquisition of Mr. Stone as secretary, as he has the confidence and respect of every member. The marked improvement in the personnel of the Committee on Education, and the addition of Mr. Carlin to the Committee on Uniform Contract are the more important changes in the committees.

A New Secretary for the Institute.

The resignation of Dankmar Adler from the secretaryship of the Institute and from the several committees of which he was a member, was the result of a great pressure of business at a time when the affairs of the Institute in themselves demanded almost constant attention. As a secretary or member of committee, Mr. Adler was a faithful and enthusiastic worker, and devoted an extraordinary amount of time to the details of the office. There is no successful movement in the architectural affairs of the past that does not bear the impress of his clear, practical judgment, and while, as a member, the Institute still has his active support, it cannot but regret the loss of his leadership. Mr. Alfred Stone, his successor, his equal in those qualities which are so necessary to the office of secretary, has two partners, and may be able to give the necessary time to the work of the secretary's office without the personal loss in his private business which was felt but, perhaps, not acknowledged, by his predecessor. It is only an indorsement of our expression a few months ago in regard to the engagement of a secretary who could give his entire time to the work of the secretary's office, when it is found that to do the work well involves so much time as to make it a hardship for any architect in active business who may have the interests of the profession so much to heart as to compel him to accept the office of secretary and attempt to do the work conscientiously. It is hoped that the

present course may not be continued until all the leading spirits in the Institute have become convinced, through experience, that no architect with a large practice can afford to occupy the office of secretary, except as the counsellor and director of an assistant whose sole occupation is that of carrying out the work of the Institute.

Seventh Convention Builders' Association.

The seventh annual convention of the National Association of Builders, which was held at St. Louis, February 14, 15 and 16, was somewhat different from those which have preceded it in the comparatively small amount of discussion indulged in during the sessions. The local exchanges have learned to make reports and these are of the greatest interest. They are not yet as full of the information in the statistical line as they should be and which would add to their value, but this will be improved upon. But aside from the report of the secretary, which gives a clear and concise synopsis of the condition of the building interests in the United States, these reports included the most valuable information presented to the convention. The wisdom of abandoning the mid-year meeting will probably be indorsed by every member, this being decided upon by the new board of directors which met after the convention had adjourned. There is little mid-year work that cannot be done by correspondence, and with so active and intelligent a secretary as is possessed by this association, the work can be carried on throughout the year except in cases of emergency. It is to be regretted that exchanges in some of the smaller cities find it difficult to continue their membership through the inability of members to see the vast amount of good the contact with those from other cities always brings. But this is not surprising when these same builders cannot see the benefit the National Association has been to them in the establishment of a Uniform Contract or from the union of interests which extends from city to city. The National Association has never been an aggressive body, and steadily discourages all aggressive measures, but is ever ready to direct an equitable policy between its members or in their association with architects, and in this it shows a strength which will of itself give permanence and a far-reaching influence for good.

Chicago Carpenter Contractors' Agreement.

Carpenters, contractors, and the union journeymen have reached an agreement which extends over the coming two years. An agreement which has lasted for two years, and which the union quotes as the reason that no strikes have occurred at the World's Fair, has just terminated. The fact in regard to the latter is, however, that it has been the rigid enforcement of his rules and a refusal to temporize with any insubordination by the director of works that has kept peace at the World's Fair grounds. We do not intend to comment upon the moral aspect of the agreement entered into nor speak of the result it leads to. It is practically a combination between the Carpenters' and Builders' Association and the United Trades Council, in which the former are promised that no union member shall work for a non-subscriber to the agreement in Cook county, and on the other hand, it forces every carpenter to be a member of the union. The agreement is much more favorable to the employers than such usually are. They can employ an unlimited number of apprentices, their foremen owe no allegiance to the union, and the union guarantees that it will use all honorable methods to prevent those not members of the association to procure workmen. This will be managed upon the plan of "sympathetic strikes," in which, in the case of non-union carpenters being placed on a job, those of every other trade instantly stop work. The minimum rate of wages is placed at 40 cents an hour, and payment is made by the hour. The association should not be condemned for entering into this agreement, for it is practically forced upon them by the conditions of labor in other trades. To the carpenter contractors belongs the credit for absolute independence in former strikes, when the masons and other trades gave in to the demands of the unions with scarcely a struggle, and now when they find, through the weak policy of others, that the unions in the building trades have become so strong and so combined that it is useless for them to stand singly as they have many times before and seek to assert their independence. They have done wisely, and now that they have entered upon this course, distasteful as it is to every member, they will abide by it faithfully and see that its provisions are carried out. It is doubtful if the unions can carry out their part of the contract, but as the only desire on the part of the contractors is to be allowed to continue their vocation without interruption, and to secure to themselves a uniform wage upon which all can make estimates, they are indifferent as to the result, knowing as they do that if the next three months work is secured that the work for the remainder of the year will not rest entirely with unions who find themselves overloaded with members for whom no work can be found. The committee of the association is, however, to be congratulated upon the equitable arrangement they have secured with the labor unions.

Agreement Between Contractor and Architect.

Architects will do well to read the brief but significant discussion of a resolution offered at the commencement of the proceedings of the third day of the convention of the National Association of Builders. In spite of the harmony existing between the Architectural and the Building Associations one could not listen to the discussion at different times during the sessions without feeling that there was either a fancied or a real injustice done the contractors in different parts of the country, and which found expression in the convention. These expressions coming from men of known ability, made with calmness and deliberation before so representative a body as the National Association, must have a large percentage of fact for a basis. When claims are made that all efforts to bring architects into consultation upon questions of mutual interest, and that the wishes of a local exchange are ignored by the architects, there must be some truth in the statement. It seems strange in this period of activity, when the architect, to be successful, must also be a builder in knowledge of materials and forms of construction, when his clients' interests demand that he be thoroughly informed upon all construction and all appliances, that he will ignore those who represent these. This mistake is made in too large a degree, and to the detriment of the profession, particularly in its business aspect. The builders deserve better treatment than has been accorded them in some cities, according to delegates' reports. A dignified consideration of the contractor is no more than a successful architect owes to himself and to his client, whose interests he represents.

DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE.

BY CHARLES E. ILLSLEY, A.M., C.E., ARCHITECT.

CHAPTER III — ISOMETRIC DRAWING.

FIGURE 28 is the plan (Section 19) of a cube (Section 18) placed with the diagonal, B D, of its upper surface perpendicular to a vertical plane standing at P P, which plane may be called the *plane of the picture*. Fig. 29 is a side elevation (Section 21) of the same.* In Fig. 29 the horizontal line B D is the side elevation of the dotted line B D in Fig. 28.

The point A in Fig. 29 seems to be on the line B D, though, as we observe in Fig. 28, it is actually some distance in front of B D. This results from the fact (Section 21) that in an elevation

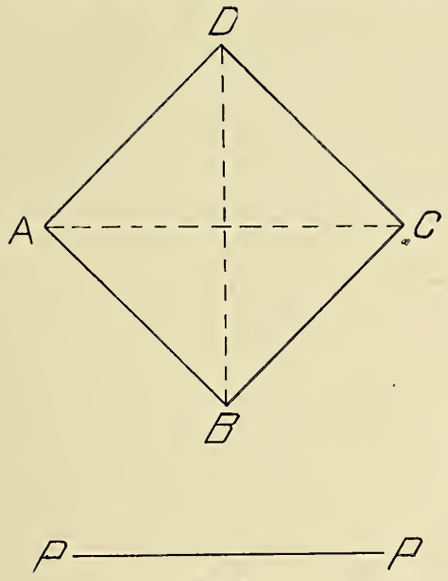


FIG. 28.

points at varying distances from the eye are drawn precisely as if they were in a common vertical plane.

29. In Fig. 28, A B C D is a perfect square with its diagonal B D perpendicular to P P. The other diagonal, A C, is consequently parallel to P P, and the sides B A and B C make equal angles of 45° each with P P.† Now, without moving the cube laterally, tilt it forward, as shown in side elevation in Fig. 30, until the corner B touches the plane P P, and the edge B E makes the same angle with P P as the edges B A and B C. This is the isometric position of the cube: an orthographic projection of it (Section 26) in this position upon the plane P P, is the isometric projection of the cube, as shown by the solid lines in Fig. 31.

30. This isometric projection of the cube is readily constructed with the aid of the previous figures, as follows: Draw a vertical,

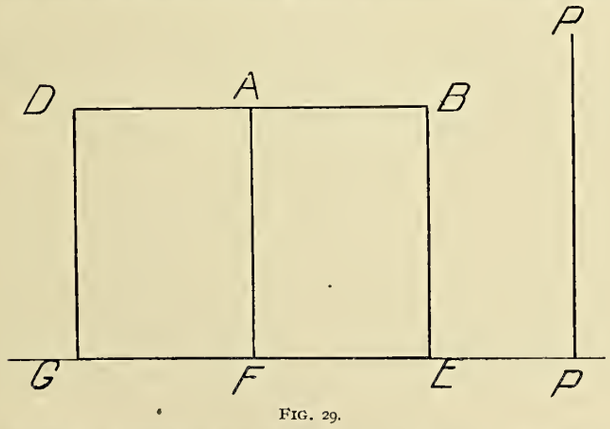


FIG. 29.

B E, Fig. 31, equal to B P in Fig. 30. The point D in Fig. 31 is vertically above B at the height B P, in Fig. 30. Draw in Fig. 31 an indefinite horizontal line, A C, at a height above E equal to E A in Fig. 30, and from where B E in Fig. 31 produced would intersect A C lay off to right and left one-half of the diagonal A C in Fig. 28. This gives the points A and C. Draw in Fig. 31 another indefinite horizontal line, F G, at a height above E equal to F G in Fig. 30. Verticals A F, C G, Fig. 31, dropped upon this horizontal will cut it at the points F and G. Connect by straight lines the points now obtained: the result will be the isometric cube.

31. The above method, while correct, is laborious, and is given only to show how the isometric projection (Fig. 31) is obtainable directly by orthographic projecting lines from the plan and elevation of the cube in Figs. 28 and 29 when placed in the isometric position. In practice the isometric cube is constructed with great facility by the aid of the thirty-degree triangle, as will be illustrated in the examples which follow.

32. The lines B E, B A, B C, Fig. 31, are called *isometric axes*. In the cube itself these are the lines which inclose and bound the solid angle at B. Being equal in length and equally inclined to each other in the solid, their isometric projections B E, B A, B C, Fig. 31, are likewise equal in length and equally inclined to each other and to the plane of the picture. Hence each of the angles A B C, C B E, A B E, equals $\frac{360}{3}° = 120°$. Moreover, every other edge of the solid cube being parallel and equal to some one of the

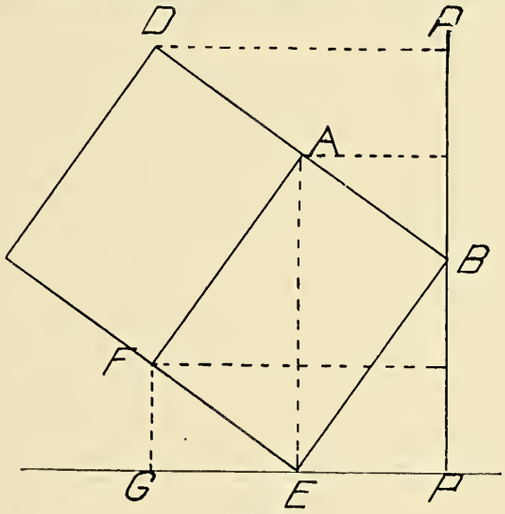


FIG. 30.

three edges inclosing the solid angle B, it follows that every other line in Fig. 31 is parallel and equal to some one of the isometric axes B A, B C, B E.

33. Hence, if the length B E (Fig. 31) of any side of the isometric cube be given, the whole cube may be drawn at once by the aid of the thirty-degree triangle without changing the position of the T square. The right angle leg of the triangle will give all vertical lines, and the thirty-degree angle direct or reversed will give the directions of all other lines. Draw the isometric axes B E, B A, B C, then lay off on each the given length B E, and from the end of each axis draw verticals or lines at 30° right and left, to complete the figure. All these lines will have the same length.

34. If we omit the axes B A, B C and B E of the isometric cube (Fig. 31), we shall have a regular hexagon of six sides, all equal and equally inclined to their adjacent sides, each side being also equal and parallel to its opposite side. Hence results another mode of drawing the isometric cube, namely; draw a circle (dotted lines in Fig. 31) with a radius equal to the given side of the isometric cube. Inscribe a regular hexagon and draw radial straight lines from the center of the hexagon to each alternate apex. The result will be the isometric cube as in Fig. 31.

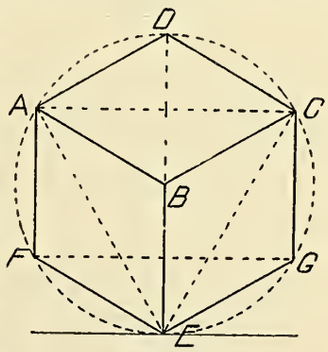


FIG. 31.

35. Since by definition the three front edges of the cube placed in the isometric position (Section 29) are equally inclined toward the plane of the picture, i.e., make equal angles with it, and since these edges are of equal length, it follows that their outer ends A,

*In Fig. 28, P P is the horizontal trace (Section 27) of the plane of the picture. In Fig. 29, P P is the vertical trace of the same plane.

†It may appear slightly inaccurate to speak of the angle made by lines B C and B A, with a line P P, which they do not touch. In geometry lines are usually regarded as unlimited in length, and their angles are those which they would make if prolonged till they met.

C and E are equally distant from the plane of the picture P P. Hence in the solid cube the lines A C, C E and A E, which join these outer ends, are parallel with the plane of the picture, and, since these lines in Fig. 31 are isometric projections of the diagonals of the anterior faces of the cube, they are of equal lengths and form an equilateral triangle, A C E, parallel with the plane of the picture. This triangle, therefore (Section 26), is orthographically projected in its true size, i.e., in Fig. 31 the lines A C, C E, A E are of the same size as the corresponding lines in the cube itself. This is true only of the lines A C, C E, A E, and such others as are parallel with them; all lines not parallel with these sides of the equilateral triangle A C E are more or less "foreshortened" in isometric projection.

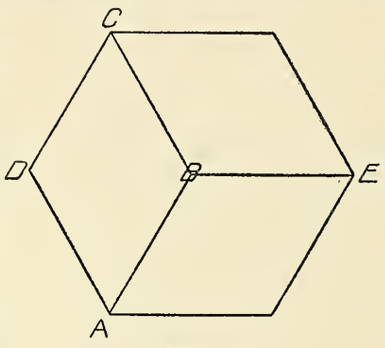


Fig. 32.

36. From the above we derive a method for drawing the true isometric projection of a cube of given dimension. Construct with the aid of the sixty-degree* triangle an equilateral triangle, A C E (Fig. 31), making each side equal the diagonal of a side of the cube itself. Complete the figure as shown by drawing verticals and lines at 30° to right and left and to the center of the equilateral triangle.

Another method would be to find the center of the equilateral triangle A C E, draw a circle from this center through the points A, C and E, and in this circle to inscribe a regular hexagon, etc., as in Section 34.

37. For practical purposes the preceding methods have the disadvantage that even with simple bodies like the cube it is more convenient to apply dimensions directly along the length, breadth and height than along the diagonals of the square faces. In more complicated work the inconvenience becomes so great that "by convention," as it is called, an inaccurate method is substituted because of its practical convenience.

38. In Section 35 it has been shown that all lines not parallel with the plane of the picture are more or less foreshortened in isometric work. The maximum foreshortening occurs with the axes B A, B C, B E, which are reduced to 0.816 of their real size. But in practice we expand our whole drawing sufficiently to make these axes of full size, which, in effect, is the same as making a correct isometric projection of a cube about twenty-five per cent larger than the real one. In this expanded drawing, therefore, the axes only (and lines parallel with them) will be of correct size, all other lines will be enlarged more or less, and the diagonals of the faces of the cubes will be enlarged most of all.

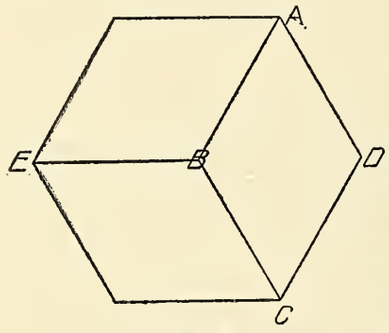


Fig. 33.

This conventionalized isometric work is sometimes called isometric *drawing*, in distinction from true isometric *projection*, as above described.

39. The usual method, therefore, of making an isometric scale drawing of a cube of given dimensions is first to draw the isometric axes B A, B C, B E in the position shown in Fig. 31 and to lay off on each axis to scale the length of a side of the given cube. Complete the hexagon as shown, all with the aid of the thirty-degree triangle. While an isometric cube may be drawn in any position whatever, the only requirement being that its outline shall be a regular hexagon and that its axes shall radiate from its center to each alternate apex of the hexagon, it will be easier to acquire familiarity with such work if at first one axis is made vertical. Figs. 32 and 33 are isometric cubes with edges B E horizontal, while in Fig. 34 the edge B E is inclined 45° to the horizontal.

40. The determination of the exact angle which the cube makes with the plane of the picture and of the exact amount of foreshortening is an interesting problem. Not being given by any authority within reach, it is here worked out in detail for the benefit of readers familiar with trigonometry.

Fig. 35 is a side elevation of a cube in isometric position relatively to a vertical *plane of the picture* at D E. The line C B is the front edge of the cube. The line F A B is the side elevation of the square which forms the upper surface of the cube. Hence, while the angle C B D is a simple angle between a line B C and a line B D, which latter is the orthographic projection of the edge B C on the vertical picture plane D E, the angle A B E is not an angle simply between two lines but between two planes, namely, the top surface of the cube and the vertical picture plane. Now, an angle between planes is measured by that between straight lines, one in each plane, drawn from a point in the common trace of these planes and each line perpendicular to that trace. The common trace of these two planes is a horizontal line in the picture plane at the altitude B D. The line in the upper surface of the cube perpendicular to this trace is plainly the

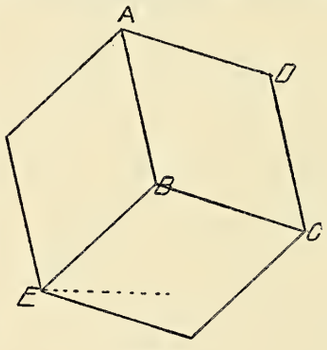


Fig. 34.

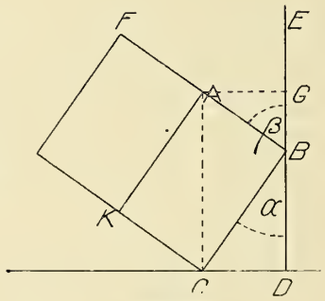


Fig. 35.

diagonal B D in Fig. 28, of which F B in Fig. 35 is the side elevation, while the corresponding line in the picture plane is B E, Fig. 35.

The line A C, which is the diagonal of the side A B C K of the cube, is parallel to the picture plane D E (Section 35), wherefore A G = C D. But A G is the distance of the center of the upper surface of the cube, i. e., of the center of its diagonal (represented by B D in Fig. 28) from the picture plane; and, since both A G and C D are perpendicular to D E, we have the following trigonometric relations, regarding A B temporarily not as the side elevation of an edge of the cube, but as the actual half of the diagonal from B to F (the same diagonal as B D in Fig. 28).

$$\sin \text{C B D} = \frac{\text{C D}}{\text{B C}}$$

$$\sin \text{A B G} = \frac{\text{A G}}{\text{A B}}$$

For convenience, designate the angle C B D by the Greek letter α, and A B G by β, also designate C D = A G by y, and C B, i. e., any side of the cube by a.

$$\text{We then have } \sin \alpha = \frac{y}{a}$$

$$\sin \beta = \frac{y}{\text{A B}} = \frac{y}{\sqrt{\frac{a^2}{2}}}$$

since the square of A B, the half diagonal of the top of the cube, equals one-half the square of one side, a, of the cube.

Moreover, since C B F is a right angle, and E B D is a straight line, the sum of the angles a and β is 90°, whence $\sin \alpha = \cos \beta$ and vice versa.

$$\therefore \sin^2 \alpha = \cos^2 \beta = \frac{y^2}{a^2},$$

$$\text{and } \cos^2 \alpha = \sin^2 \beta = \frac{2y^2}{a^2}$$

$$\text{Hence } \tan^2 \alpha = \frac{\sin^2 \alpha}{\cos^2 \alpha} = \frac{\frac{y^2}{a^2}}{\frac{2y^2}{a^2}} = \tfrac{1}{2}$$

$$\tan \alpha = \sqrt{\tfrac{1}{2}} = \sqrt{0.5} = 0.7071+ = \text{Nat tan } 35° 16'$$

The angle β, being the complement of α, = 54° 44′

*In sections 33 and 34 the length of one side of the isometric cube is assumed to be given. In section 35 the size of the solid object itself is given, and the length of the side of the isometric cube is to be ascertained therefrom.

The line B D (Fig. 35) is the projection of B C on the picture plane. Its length = B C × cos a = B C × 0.816+, i. e., the isometric projection of an edge of the cube is about four-fifths of its real length, and, vice versa, the real size of the line is about one quarter larger than its isometric projection.

The angle a may also be obtained directly through its cosine, thus:

$$\text{sin } a : \sin \beta :: \frac{y}{a} : \sqrt{\frac{2y^2}{a^2}} :: \frac{y}{a} : \frac{y}{a}\sqrt{2} :: 1 : \sqrt{2}$$

Hence, $\sin a = \frac{\sin \beta}{\sqrt{2}} = \frac{\cos a}{\sqrt{2}}$ (1) since a is the complement of β.

But for any augle whatever $\sin^2 + \cos^2 = 1$

$$\therefore \sin^2 a + \cos^2 a = 1 \quad \therefore \sin^2 a = 1 - \cos^2 a \text{ (2)}$$

Substituting in (2) the value of sin a from (1) we have

$$\frac{\cos a}{\sqrt{2}} = \sqrt{1 - \cos^2 a} \therefore \cos^2 a = \tfrac{2}{3} = 0.6666$$

Hence $\cos a = + \sqrt{0.6666} = 0.8164+ = \cos 35°—16'$

(To be continued.)

AFTER TEN YEARS.

BY P. B. WIGHT.

TEN years of architectural journalism and ten years of architectural progress are the record of THE INLAND ARCHITECT with the present issue. To what degree of excellence the former has attained its readers can form a just estimate by comparing this number with the initial one. This is no occasion for self laudation. The record has been made and the jury, consisting of its thousands of patrons, will render its verdict of approval or disapproval, by the support which it will give to it in the future. But the record of architectural progress has been inscribed throughout the length and breadth of the country.

It is not assumed that this commenced a decade ago. Far from it. The influences which have shaped the architectural thought of this period, are those which existed at its commencement. They are still predominant. But they have found the *opportunity* for expression.

It is needless to say that these ten years have been years of prosperity. The evidences are all around us and have been largely recorded in these pages. We are about to witness one of its culminations in the greatest of World's Expositions. In this the architects have almost completed their work. It remains alone for the final touches to be given before the world is asked to give its judgment. Architecture at Jackson Park is exhibited in the buildings which now cover the ground. With the exception of a few structures for the use of foreign commissions, it is all American, and the work of American architects. All *other* exhibits are of an international character. *This* is therefore the great culminatiou of the opportunities of preceding years. It is all that it is possible to give as an exhibit of American architecture. The works are, to be sure, only those of a few architects. But selection was a necessity. There were not enough buildings required to give all of the men of greatest ability and reputation an opportunity; but as many architects were selected as it was practicable to employ on the work. Thus far there has beeu uo criticism of the selection—as has invariably been the case when similar enterprises have been undertaken. That there has been no competitiou for the work is the best evidence that the architects of the nation themselves—who are foremost in the conviction that architectural competitions are not as a rule productive of good results—are satisfied with the manner in which the selection has been made. This, as is well kuown, has been based on the reputations and experiences of the fortunate ones who have been chosen as representative men to put forth their best efforts for the national reputation. All the competition therefore, is between the architects of the several buildings of the Exposition who have been given the unparalleled opportunity to have full size models of their designs erected For such in the main are the Exposition buildings. The engineers only have been able to show real work. The architects have had almost free scope untrammeled by considerations of elaboration or cost. It would be interesting therefore if someone would make an estimate of the cost of these buildings had they been constructed of enduring materials such as would best express the nature of their design. The world would then realize the euormity of the enterprise. As a whole the buildings are also an exhibit of grouping and arrangement, where the effects of water as well as landscape were possible. This has been the result, not of one man's ideas, but of the deliberations of a council of the representative men of the profession of architecture, assisted by the ablest landscape advisers.

Such, therefore, is, briefly stated, the way in which American architecture has had the opportunity for its last and greatest expressiou. And while it is not our province here to say how successfully it has been done, we are bound to accept it as an accomplished fact, showing what can be done by men unfettered and untrammeled. It is now a matter of history, the visible page of which is soon to be obliterated, but the record of which will be preserved in memory for a long time to come.

It is also a fact worth mentioning that never before at an international exposition has architecture been made the most prominent exhibit. This has only been possible after a thoughtful study of the best method to bring about such a resnlt. The intelligence and liberality of the directors of the local organization known as the World's Columbian Exposition first made the way easy for this, and the late Mr. Root, consulting architect, carried out the details. Architecture was the first exhibit provided for, to be illustrated by the works of its best known professors, in the buildings to be used for housing all other exhibits. Other international expositions have been embellished with handsoue buildings, but of none heretofore held will the memory of its architectural glories endure as with this. Paris in 1889 had buildings which did uot express even the average ability of its architects. It was most remarkable for its sculptural adornment. Chicago is not only most eminent in architecture but, to the surprise even of its promoters, has succeeded even better than Paris in adapting its greatest works of sculpture to so adorn its architecture as to be part and parcel of it.

These events, which will go down in history, serve only to illustrate the possibilities to which architecture in America may attain. Without preparation they would be impossible. They are not the results of a sudden inspiration, but of a period of training and experience. Without the actual works of the past ten years the great Exposition would not be what it is. The men who built it are not newly-discovered geniuses but hard-worked practitioners. It may more properly be said of some of the sculptors that they were waiting their opportunity. America has never offered adequate encouragement to native sculptors. The same may be said of painters whose works are associated with architecture. But herein the three classes of artists have acted in unison, recognizing the predouinating position of the architect as master of the house.

It is during the last two years that the architects of the West have taken rank with those of the East. One of her most eminent critics who has after a few years of trial become permanently located in a city which is typical of everything that is western, has declared that Chicago, of all western cities, has become the recognized center of all architectural progress. This is more even than she expected from the Harvard graduate and typical Bostonian. But it was said before the Exposition was an accomplished fact and without regard to it. Let her, therefore, look to her laurels and see that they are uot torn or defaced. Let her hold fast to some of those artists who have come to adorn her palaces by the lake, and have shown what sculpture and painting can do when associated with architecture; so that they may abide with us and give us things of beauty to adorn our homes and churches and civic edifices. For thus only may Chicago become a center for all the arts, as it is now for one.

There could be no more fitting way to accomplish this than to keep the Fine Arts Palace, or at least the main part of it, in Jackson Park, where it now stands; to endow it with such support as will make it a Temple for Artists; to collect within its walls the best examples of the representative sculpture now on the buildings soon to be destroyed, which will make the Great Exposition famous throughout the world; to make it a fitting setting, as it is by all that is beautiful in line, proportion and adornment, for the treasures of art which the opportunity of the World's Exposition places it in our power to obtain now for a great and permanent museum.

When, through the World's Congress of Architects, members of the profession from every part of the globe couvene in Chicago in August next, the world will see, as never before, what ten years of progress means, and witness its culmination.

SEVENTH ANNUAL CONVENTION, NATIONAL ASSOCIATION OF BUILDERS.

THE seventh annual convention of the National Association of Builders of the United States of America was held at St. Louis, Missouri, on February 14, 15 and 16, in the Odd Fellows hall of that city. The members of the executive committee of the St. Louis Exchange met the delegates at the trains. Jeremiah Sheehan was chairman.

The first session was called to order by President Anthony Ittner, of St. Louis, who introduced the Rev. Dr. J. C. Larned, who offered prayer and who was followed by Mayor Noonan in an address of welcome.

President Ittner then addressed the convention as follows:

PRESIDENT'S ADDRESS.

Gentlemen of the Convention: Before proceeding with the regular order of business for which we are convened, and in keeping with an established custom, it becomes my duty as your presiding officer to deliver a formal address.

It is my pleasing duty, on behalf of the Builders' Exchange of this city, to extend to you a hearty and cordial welcome, and to express the hope that your brief stay among us may be pleasant and agreeable. Rest assured that no effort on our part will be spared to make it so. It will not be necessary for me to speak of matters in detail, as this will be done later on, by our worthy and efficient secretary, in a much more able manner than I could hope to do.

Our association is now assembled in seventh annual convention; Chicago, Cincinnati, Philadelphia, St. Paul, New York, Cleveland and now St. Louis, in the order named, are the cities that have been successively honored by your presence. It is my pleasant privilege to speak in a general way, of some of the good things accomplished since the organization of our association. There cannot now be any question among well-informed and unprejudiced persons, concerning the foresight and wisdom of its founders. To question proper and intelligent organization and coöperation among those in any line of calling, whose interests are kindred and mutual in their nature, can only be accounted for through ignorance or prejudice, as, to do so, is to call into question the very fundamental principles upon which society and our government are founded. Our methods are open, manly and just, we transact our business with open doors, in the full light of the noonday sun, and our proceedings are recorded and printed in full, so that they can be witnessed and read by all who may have a desire to do so, in fact, we take special pleasure in furnishing any information that may be desired concerning our organization, to anyone who may apply for same.

The results of our deliberations are merely recommendatory, and are submitted to the filial bodies composing this association and to the trade generally, in order to bring about uniformity of methods and practices with a view to the general betterment and well being of all concerned, and for the purpose of creating and perpetuating a proper and friendly feeling between employer and employé. It is in no self-laudatory spirit, but rather as a fact, that I assert that no man who has witnessed our proceedings and the personnel of our membership can go away without being favorably impressed with both, and I presage for our association length of days and a great future that must ultimately place it in the fore front of national bodies; in fact I go further and predict the day (perhaps not in our time), when we shall assume an international character by meeting in joint assembly the brightest minds of the old world and exchanging with them ideas of the greatest benefit to both hemispheres; and in this way enlarge the scope of our usefulness. I am in such full sympathy and hearty accord with many of the principles enunciated by our association at its first annual convention in Chicago, that I hope to be pardoned for reproducing some of them and making them part of my address.

In your Declaration of Rights you say: "This association affirms that absolute personal independence of the individual to work or not to work, to employ or not to employ, is a fundamental principle which should never be questioned or assailed; that upon it depends the security of our whole social fabric and business prosperity, and that employers and workmen should be equally interested in its defense and preservation. While upholding this principle as an essential safeguard for all concerned, this association would appeal to employers in building trades to recognize that there are many opportunities for good in associations of workmen; and, while condemning and opposing improper action upon their part, they should aid and assist them in all just and honorable purposes. That while, upon fundamental principles, it would be useless to confer or arbitrate, there are still many points upon which conferences and arbitrations are perfectly right and proper, and that upon such points it is a manifest duty to take advantage of the opportunities afforded by associations to confer together, to the end that strikes, lockouts and other disturbances may be prevented. When such conferences are entered into, care should be taken to state clearly, in advance, that this fundamental principle must be maintained, and that such conferences should only be competent to report results in the form of resolutions of recommendation to the individuals composing the various organizations participating, avoiding all forms of dictatorial authority." This reads well, and after a lapse of six years, I take it there is nothing contained therein that you would care to modify or expunge, nay, on the contrary, every word and syllable it expresses, is something to be proud of and you may well congratulate yourselves that such is the record.

I now ask your attention to the leading paragraph in your Constitution, which you will agree with me dovetails nicely with the paragraph just read from your Declaration of Rights. It is as follows:

"Article II.—The fundamental objects of this Association shall be to foster and protect the interests of contractors, workmen and others concerned in the erection and construction of buildings; to promote mechanical and industrial interests; to acquire, preserve and disseminate valuable information connected with building trades; to devise and suggest plans for the preservation of mechanical skill through a more complete and practical apprenticeship system; and to establish uniformity and harmony of action among builders throughout the country. The better to accomplish these objects this Association shall encourage the establishment of Builders' Exchanges in every city or town of importance throughout the country, and shall aid them to organize upon some general system that will not conflict with local customs and interests, in order that through these filial associations the resolutions and recommendations of this National Association may be promulgated and adopted in all localities."

I trust you will agree with me, that the magnitude and importance of these fundamental principles and declarations of your national body were sufficient justification for their repetition as a part of my address; thereby hoping to familiarize the public more and more with our objects and purposes, and in this way to secure the approbation and esteem of the people of our common country, and at the same time to increase our usefulness and importance.

There were also recommended at your first convention: "The adoption of a uniform system of apprenticeship by the various mechanical trades"; "that manual training schools should be established as a part of the public school system, and that trade night schools should be organized by the various local trade organizations, for the benefit and improvement of apprentices," also a system of payment by the hour for all labor performed, other than "piece" and "salary work." A uniform contract was recommended, which has since been adopted, and is now generally used throughout the country. This was brought about through a joint committee of the American Institute of Architects, the Western Association of Architects and of the National Association of Builders. Since your last convention at Cleveland, Ohio, this contract has been amended, and will be submitted to you in its present shape by your committee, of which Mr. George C. Prussing, of Chicago, is chairman.

On the subject of trade schools and apprenticeships, we have great cause for congratulation; Col. R. T. Auchmuty, of New York, who is the pioneer of trade schools in this country, has been encouraged in his good work by a munificent voluntary gift of a half million dollars by J. Pierpont Morgan, of New York. When we consider how deeply Colonel Auchmuty's heart is engaged in this work, and that his remaining days are dedicated to its service and advancement, we can appreciate the feeling of gladness and rejoicing that possessed his very being when the knowledge first came to him of this princely gift. Colonel Auchmuty came to me in our convention hall in New York, having learned that we were then agitating the establishment of a trade school in our city, under the auspices of our exchange, and voluntarily offered a contribution of $1,500 a year for three years, in case we should succeed in starting a trade school here. I thanked the colonel from the bottom of my heart for his generous offer, and knowing what he was then doing for the Philadelphia Trade School, and the great responsibility he had on his hands in his own school, which I understood was being maintained entirely at his own expense, I remarked to him that he was doing himself an injustice; that the impulses of his big heart would lead him to take upon himself a greater load than he could carry. His answer to this was, "Mr. Ittner, I have not got many years to live and I desire that the remainder of my days shall be spent in the interest of the *American boy*." All honor to Col. Richard T. Auchmuty, of New York! I desire to say in this connection, that I felt it a duty incumbent upon me to write to J. Pierpont Morgan, of New York, thanking him in behalf of the National Association of Builders and in the interest of the "American Boy" for his noble gift in aid of Colonel Auchmuty's Trade School, and I feel sure that you will approve of and indorse that action. We still receive very flattering and encouraging reports from the trade school established under the auspices of the Builders' Exchange of Philadelphia. I regret to be compelled to report that as yet nothing definite has been done toward the establishment of a trade school in this city, but I feel justified in saying that the project is not abandoned by any means; there are those among us who with half encouragement will take it up and inaugurate the system, and once under way I have no fear of its final success.

It affords me much pleasure to be able to report for the information of the convention, that a system of apprenticeships, or miniature trade schools, have been in vogue for some time in this country, in other than the building trades, principally in iron foundries, in the stove and hollow ware molding business. I have letters from those who have the system in successful operation, which I would be glad to present to the convention should the discussion upon this subject during your deliberations call them out. I hope and pray for the day to come, when no "American boy," with the spirit and ambition within him to advance his condition and become a skilled workman, will be debarred the privilege of doing so. As well might we shut out the sunlight of heaven, and withhold the air and water from a portion of God's children, as to place arbitrary restrictions upon a portion of the same family, that would debar them from becoming skilled artisans. There will always be drones enough from choice, or I might say from want of ambition or desire to advance in the world, and from untoward circumstances, to do the drudgery. This class is at present largely in the majority, or unskilled labor would not be working today for one-half and in many cases for one-fourth, and in rare instances for one-tenth of what is being paid to skilled labor. There is no just reason to be advanced why the difference should be so great.

There is a dearth of skilled labor in all branches of industry, largely if not altogether due to the proscription of the apprenticeship system by the organized labor associations of the country. Having labored from boyhood, and having served and had the advantages of an apprenticeship in two different trades, I have the greater reason to sympathize with those who are so unfortunate as to be debarred the advantages of any trade at all. There is also a feeling of disappointment in the contemplation of the thought that free American mechanics in a free country, should encounge restrictive and arbitrary rules by which American boys are deprived of the advantages of trades and of becoming skilled workmen. There is a sadness in the reflection that a father would favor methods by which his own son is prevented from learning the trade of his choice. The wrong would indeed be deplorable if there were not an outcome resulting in good, in the shape of the trade school and which will ere long supply the want, and also mark a vast improvement on the old system.

Mr. President Tucker, at our fifth convention in New York, made brief mention concerning a subject that is receiving more or less attention from the business world. I refer to profit sharing, which I deem of sufficient importance and merit for your careful consideration, and would recommend that the matter be entertained and sent to one of your standing committees, or if you think best have it go to a special committee; also that more full and accurate statistics be encouraged, by and through the filial bodies composing this association, so that we may be enabled to arrive at a more complete knowledge of the vastness and importance of the building industry in this country; likewise to encourage through the same channel, perfect building laws and ordinances governing the proper construction of buildings in cities, where such do not now exist, and that experienced and competent practical builders be selected as commissioners to supervise their construction. It is to be hoped that the uniform style of contract, as revised and amended during the year, will now come into more general use, and that many wrongs and inequalities, so aptly referred to in President McAllister's last annual address, heretofore imposed upon the contracting builders, will cease. The relations existing between the architect and the builder should be friendly and sincere in their nature. The former can do full justice to his client without necessarily doing an injury to the builder, and in case the builder renders an honest compliance with the terms of his contract, he should not be asked to do more.

Such magnificent exhibitions of skill and speed would astonish the builders of old, could they after the lapse of centuries, come forth from their grave and view these grand structures. They would surely stand spellbound with wonder and awe at the mighty progress and skill of the builder of today (as compared with the time in which they "lived and moved and had their being"). Nor has the state of the art, as yet, by any means, reached perfection. Arguing from the history and experience of the past, we are justified in the conclusion that it is susceptible of still greater improvement.

Architecture in this country, as it is to be seen and admired at the World's Columbian Exposition in Chicago, has reached its most advanced state, and, as one having had the privilege of witnessing its beauty and grandeur on the occasion of the formal opening in October last, I feel justified in saying that it does great honor to the profession, and my sincere wish is that every American citizen, with any taste for art and love of the beautiful, might have the opportunity to view the beauty of outline of the many buildings within the World's Fair inclosure.

It is indeed with a sad heart that I announce the death, during the past year, of Marc Eidlitz, of New York, one of the charter members of our association, and a man whom to know, was to respect and honor, and whose person and presence gave tone and dignity to any body of which he was a member. So far as I am at present aware, the only solemn and painful duty you will be called upon to perform during this session is to formulate appropriate resolutions of respect to his memory.

While it is our wish to have this, the seventh annual convention, known as a business meeting, it is not our purpose to depart from or omit any of the pleasant customs and enjoyments that have uniformly been observed on previous occasions of this sort, and which serve to make us better acquainted with each other and thus increase our advantages and usefulness as members of the association.

While, as I am disposed to believe, we may have plenty of work to do in the consideration of propositions suggested at previous conventions, we will still be glad to receive new thoughts and matters to be acted upon at the present session, if the time will permit, or to be submitted and referred to appropriate committees to be reported and acted upon at a future meeting.

The World's Columbian Exposition at Chicago marks unparalleled advancement in architecture and building compared with its status as exhibited at the Centennial Exposition at Philadelphia in 1876.

I think it is no stretch of the imagination to say that the progress made in the intervening seventeen years far exceeds the progress of our entire previous history as a nation.

No one, who has not heretofore, or who may not hereafter, visit the Exposition, and witness with his own eyes the magnitude and grandeur of the graceful and stately structures that there meet the eye on every hand, can possibly credit my statement, and it is upon this account that I urge upon every American citizen who loves his country and prides himself upon its

advancement and glory, to spend his last dollar if necessary, even to pawning his watch, if he has one, in order to raise the money, to visit the World's Fair and behold its beauties. The time will be profitably spent, and he who goes will thereafter feel himself more a man and cherish a stronger feeling of pride for its country and its citizenship. Yes, by all means, and under any and all circumstances let everyone who can, visit Chicago and cross the threshold of a new world in science, art and manufactures. I trust I may be excused for the further reference to this subject, but I felt its importance sufficient justification.

And now, gentlemen of the convention, throwing myself upon your forbearance and kindness for my shortcomings, and asking your aid and support in the duties I am now called upon to discharge as your presiding officer, and thanking you for your kind attention, we will proceed with the regular order of business as marked out in our programme.

At the close of the president's address, Secretary William H. Sayward appointed as his assistants William Harkness, Jr., of Philadelphia, and J. H. Grant, of Rochester.

The president appointed as Committee on Credentials, Martin B. Madden, of Chicago, Jeremiah Sheehan, of St. Louis, E. Noyes Whitcomb, of Boston, J. McGauley, of Indianapolis, and W. J. Hill of Denver. The session then adjourned to meet the following day at 9 o'clock.

SECOND DAY—MORNING SESSION.

The president called for the report of the Committee on Credentials, which was presented by M. B. Madden, chairman, as follows :

The Builders' Exchange of Baltimore, Md.—Nobler H. Creagir, Israel Griffith, E. D. Milter, George Mann.

The Master Builders' Association of Boston, Mass.—James F. Wingate, William N. Young, Charles W. Parker, C. Everett Clark, David McIntosh, Walter J. Comory, George E. Leighton.

The Builders' Association Exchange of Buffalo, N. Y.—A. A. Bessick, Charles A. Rupp, John Feist, James Boland.

The Builders' and Traders' Exchange of Chicago, Ill.—C. W. Gindele, William H. Alsip, George Tapper, M. B. Madden, Frank S. Wright, D. V. Purington, James A. Hogan, François Blair, George C. Prussing, William Henry, John Rawle, John Griffiths, James John.

The Builders' Exchange of Cincinnati, Ohio.—S. D. Tippett, L. B. Hancock, B. W. Blair, J. Milton Blair.

The Cleveland Builders' and Dealers' Exchange Company, of Cleveland, Ohio.—E. H. Towson, J. W. Conget, Arthur A. McAllister, J. A. Reaugh.

The Builders' Exchange, of Denver, Colo.—C. W. Fair, J. D. McGilvray, W. J. Hill.

The Builders' Exchange, of Detroit, Mich.—Alexander Chaporon, Jr., Robert Hutton, G. Jay Vinton.

The Builders' and Traders' Exchange, of Grand Rapids, Mich.—P. C. Campbell, James Curtis, W. T. McGurrin.

The Builders' Exchange, of Indianapolis, Ind.—James McGauley, Charles Neurge, William Koss.

The Builders' Exchange, of Louisville, Ky.—J. H. Murphy, G. L. Smith, William Muster.

The Builders' Exchange of Lowell, Mass.—J. H. Coggeshall, Patrick Coulan, Charles R. Costello.

The Builders' and Traders' Exchange of Milwaukee, Wis.—Paul Reisen, Henry Ferge, J. A. Meyers, T. R. Bentley.

The Builders' Exchange of Minneapolis, Minn.—George W. Libby, Emory F. Dodson.

The Mechanics' and Traders' Exchange of New York, N. Y.—George Moore Smith, Andrew J. Campbell, Stephen M. Wright, Warren A. Conover, John I. Roberts, C. A. Cowan, Augustus Meyers.

The Builders' Exchange of Omaha, Neb.—William S. Widge, George Bassett.

The Master Builders' Exchange of Philadelphia, Pa.—Stacey Reeves, William H. Albertson, W. S. P. Shields, George Watson, F. M. Harris, John S. Stevens, William Harkness.

The Mechanics' Exchange, of Providence, R. I.—W. W. Batchelder, Richard Hayward, A. C. J. Larned.

The Builders' and Building Supply Dealers' Exchange, of Rochester, N. Y.—H. H. Edgerton, S. G. Hollester, J. J. L. Friederich.

The Contractors' and Builders' Board of Trade, of St. Paul, Minn.—G. J. Grant, J. W. Makinson, William Rhodes.

The Mechanics' Exchange, of St. Louis, Mo.—Jeremiah Sheehan, Charles B. McCormack, W. S. Simpson, Richard Shimmick, H. C. Gillick.

The Builders' Exchange, of East Saginaw, Mich.—Michael Winkler, John H. Queellman.

The Builders' Exchange, of Wilmington, Del.—A. S. Reed, W. H. Foulk, I. P. Almond.

Builders' Exchange, of Worchester, Mass.—C. D. Morse, O. S. Kendall, G. W. Carr.

The delegates numbered ninety-seven and represented twenty-four cities.

A committee, consisting of C. W. Gindele, of Chicago, J. Milton Blair, of Cincinnati, John S. Stevens, of Philadelphia, Stephen M. Wright, of New York, and Arthur McAllister, of Cleveland, were appointed as a Committee on Nominations, and to name time and place for holding the next convention.

Secretary Sayward then read his report, which is in full as follows :

SECRETARY'S REPORT.

MEMBERSHIP.

The close of the sixth year of the existence of the National Association of Builders presents about the same conditions, as far as regards the number of exchanges in membership, as existed at the time of your secretary's last annual report. It will be remembered that at the last convention the delegates from the Pittsburgh Exchange, not being content to abide by the opinion of the majority of their fellow delegates on the interpretation of the Constitution in the matter of representation at conventions, withdrew from the convention and on the following day sent in a communication declaring the withdrawal of the Pittsburgh Exchange from the National Association. This action of the delegates has since been confirmed by the exchange.

In addition to this defection there are two other lapses to report, through failure of payment of the per-capita tax, namely, Grand Rapids, Michigan, and Pueblo, Colorado.

One new exchange has secured application, namely, Butte City, Montana.

The exchanges of Kansas City and St. Joseph, which were reported last year as having temporarily withdrawn on account of weakness in financial conditions caused by a series of bad business years, have not yet renewed affiliation, but the former is now gaining ground rapidly and promises speedy renewal of membership.

The actual number of exchanges in membership is thirty-one, two less than at the last convention.

Organized bodies of builders from which future additions to our membership may be expected, most of them organized under advice and information given by your secretary, and on lines advocated by the National Association, exist in a great many cities and towns of the country. I have been in correspondence with fifty-two exchanges not yet affiliated, which have been established largely through the agitation, influence and information of the National Association.

While it is not essential to the life of the National Association that it comprehend in its membership each and all of these organizations in the smaller cities and towns of the country, it *is* important to these bodies themselves that they be placed in position to receive the education and benefit which comes by virtue of the measures adopted by the National Association to obtain a wide comparison of experiences, discuss practices and recommend methods by and through which improvements may be uniformly secured, and the best interests of builders systematically and intelligently advanced.

Before leaving the subject of membership I desire to emphasize the fact that the value and strength of the National Association depends upon the observance of exactly the same principles as those which we recommend for the guidance of local bodies, namely, that a large membership does not necessarily indicate greatness, that the true aim of all associations should be quality rather than quantity, and that selection based upon intrinsic merit of the individual is the surest safeguard and defense against disintegration and decay.

STATISTICS.

In the matter of statistics the secretary is supposed during the year to work upon lines laid down by the Committee on Statistics, it being the function of that committee to designate lines of inquiry, leaving the detail necessarily to the secretary's department.

This year the committee suggested nothing new, and aside from the matter relative to builders, their organization and progress, published in the columns of *Carpentry and Building*, and which if compiled would form statistics, the usual effort to keep in touch with all organizations allied to building is all that has been undertaken in this direction.

The following table shows the various classes of associations comprehended in the secretary's files with the increase and decrease over the number reported at the last convention :

ORGANIZATIONS OF	Local.	National. State. Sect'nal.	Total.	Total in 1892.	De-crease.	In-crease.
Builders	127	1	128	104	....	24
Steam and Hot Water Fitters	19	7	26	28	2	....
Master Masons	30	1	31	33	2	....
Master Carpenters	27	....	27	28	1	...
Master Plumbers	97	8	105	98	....	7
Master Painters	45	12	57	60	3	....
Master Plasterers	8	....	8	8	....	....
Master Roofers	13	3	16	14	....	2
Master Stonecutters	13	4	17	14	....	3
Master Quarrymen	3	3	6	8	2	....
Lumber Manufacturers and Dealers	47	47	94	92	....	2
Brickmakers	10	4	14	14	....	....
Ironworkers	6	....	6	7	1	....
Marble and Granite Dealers	....	7	7	6	....	1
Architects	41	19	60	70	10	....
Engineering associations	22	23	45	43	....	2
Electrical "	7	4	11	11	...	....
Miscellaneous "	33	23	56	55	....	1
Trade schools	3	....	3	4	1	.. .
Building exhibits	4	....	4	4	....	....
	555	166	721	701	22	42
Net increase	.....	.....	20			

SUMMARY.

	Total.	Total in 1892.	De-crease.	In-crease.	Net in-crease.
National organizations	33	40	7	....	....
Sectional "	44	42	....	2	....
State "	89	75	....	14	....
Local "	555	544	....	11	...
Totals	721	701	7	27	
Less total in 1892	701			7	
Net increase	20				20

Foreign associations listed, 83, an increase of 5. Canadian associations listed, 46, an increase of 6.

CONDITION OF FILIAL BODIES.

During the past year there has been a noticeable improvement in the affairs and conduct of most of the local bodies, more particularly marked of course in in some cases than in others, but on the whole there is an unmistakable movement in advance all along the line, which is plainly attributable to the stimulative influence of the National Association. This will undoubtedly be shown in detail by the reports from the various filial bodies which are to be presented at this convention and from which much food for thought and discussion is anticipated with the sure result of benefit to all by comparison of views and exchange of experiences with recommendations and policies emanating therefrom.

In view of these detailed reports it is not proper for me to treat this portion of my report with as much particularity as usual, but it is appropriate for me to comment in a general way upon the trend which is plainly visible from my point of view.

The officials of local bodies may be unduly elated or depressed by conditions existent in their environment, and are likely to color their conclusions as to general conditions by their local ones. The advantage of a central organization is here manifested in the opportunity offered for a wider and more comprehensive outlook, which results in a truer judgment as to the prevailing condition

throughout the whole body. Just as in any one of the organizations which form the National, it would be delusive to base a judgment of the condition of that body upon the attitude or sentiment of particular individuals, so in the National Association itself, conclusions as to improvement or lack thereof upon the lines and policies laid down by it are not to be reached or based upon the conditions prevailing in one or another of its constituent parts, but upon the average conditions manifested in the body as a whole. It is with great satisfaction, therefore, that I declare that at no time since the National Association was established has there been such general evidence of improvement in condition of local bodies as during the past year; never has there been such promise for the future. In some cases it is true there are facts existent which we cannot but deplore, but those very facts are no doubt a part of the evolution necessary to final and permanently better life.

MID-YEAR MEETING.

In accordance with the custom established three years ago the officers, directors and members of standing committees assembled in mid-year meeting on October 17, the sessions lasting through three days. The place of meeting was, in accordance with the vote of the last convention, in the city of Indianapolis; a change from previous custom of holding this meeting in the same city as that in which the coming convention was to take place. This innovation proved to be a valuable one, and indeed everything in connection with the meeting was a great success. The purpose which these mid-year gatherings is calculated to serve was shown anew to be most valuable on this occasion, for the need of the coming together of those who have been selected at the annual convention to have charge of the affairs of the national body during the year was plainly evident at Indianapolis, as well as on the two previous occasions when this plan has been tried.

The full detail of the proceedings of this meeting has been published in our department in *Carpentry and Building*, but a brief review will not be out of place here, for many delegates have doubtless failed to read the account.

The secretary gave to the directors a more detailed summary of work in his department than is feasible at a convention of the whole body, and asked for and received many suggestions from the directors for further and more perfect carrying out of the purposes of the national body.

The various standing committees took advantage of the opportunities which the meeting afforded for consultation, made report of progress, and in turn received such suggestions as the board had to offer in their field of work.

Each director present made report of matters of interest connected with the affairs of his exchange, and discussion of the same ensued when any point was brought up which invited comment, favorable or otherwise. These statements and discussions served an eminently valuable end, inasmuch as they stimulated thought and urged the directors to aim for still greater efficiency in carrying out the policies emanating from the National Association. It was shown that in many of the exchanges not nearly as much had been done in urging the use of the Uniform Contract, in putting the Codes of Practice into operation, or in adopting our plan of arbitration with the workmen.

The vacancy in the Board of Directors caused by the death of Marc Eidlitz, of New York, was filled by the election of Mr. John J. Tucker, of that city.

Resolutions expressive of the great loss which the Board of Directors had suffered in the loss of Brother Eidlitz were presented and unanimously adopted after most touching and heartfelt words had been spoken by all of the directors who had been most intimately associated with him. The resolutions were as follows:

"WHEREAS, The National Association of Builders, since its last meeting, has met with the loss of one of its most honored directors by the death of Marc Eidlitz, who represented in its councils the great and varied interests of New York city;

"WHEREAS, Our brother has since the inception of the National Association been closely identified with its interests, leaving upon its plan of organization and its subsequent operations the imprint of his personality, and from his practical experience as a builder offering countless wise and useful suggestions for his younger and less experienced brethren, therefore be it

"*Resolved*, That the officers and directors of the National Association of Builders, in mid-year meeting assembled, do hereby offer a loving tribute to the integrity and sterling worth of our dear brother, and testify to the deep sense of loss which his death has brought to this Association at a time when his ripe judgment, advice and counsel were most needed by his associates.

"*Resolved*, That these resolutions be entered upon the records and a copy of the same be sent to his family, to the Mechanics and Traders Exchange and the Building Trades Club of New York city, as expressing regret from his brethren of the building fraternity of the United States."

Besides cordial expressions of appreciation from the New York Exchange and the Building Trades Club, the following has been received from Mr. Otto Eidlitz:

"*William H. Sayward, Esq., 166 Devonshire Street, Boston, Mass.:*

"MY DEAR MR. SAYWARD,—Allow me on behalf of my mother and the family to express to the Board of Directors of the National Association of Builders and yourself, our heartfelt appreciation of the feelings that prompted the 'resolutions' which you have forwarded to us, and to say that we hold most high and cherish deeply this expression of sympathy. Very respectfully yours, OTTO M. EIDLITZ."

"December 4, 1892.

The submission of directors' reports was followed by a discussion of the probable bearing of the new eight-hour law passed by Congress on the interests of builders, and the secretary was instructed to procure, if possible, from the United States attorney-general, an opinion upon the practical operation of the law in the detail of building work under government contracts.

The question of attempting to secure a congress of builders in connection with the World's Congress Auxiliary of the Columbian Exposition was discussed, and it was voted inexpedient to attempt anything of the kind.

The advisability of preparing a standard form of organization for local bodies was discussed, and the whole matter was referred to the Legislation Committee with instructions to report at this convention.

Revision of the constitution was carefully considered, and it was voted to instruct the secretary to request all filial bodies to prepare such changes as might seem to them advisable, and send the same to the national secretary in time to be properly notified as demanded by the constitution.

A communication was received from P. J. McGuire, general secretary of the United Brotherhood of Carpenters and Joiners of the United States, requesting the privilege of addressing this convention on the relationship of employers and workmen. After discussion the request of Mr. McGuire was referred to the Executive Committee with full powers. The Executive Committee afterward decided that it would be inadvisable at this time to accede to the proposition, as the association had not yet arrived at a condition which would make such a presentation productive of the best results.

The director from Louisville brought to the attention of the board the fact that a proposition emanating from his exchange on the question of coöperation of the affiliated bodies of the national in disputes of any local body with architects, had never been acted upon. The matter was referred to the Committee on Resolutions with instructions to report at this convention.

The Builders' and Traders' Exchange of Chicago extended, through their director, a cordial invitation to the National Association to call its mid-year meeting for 1893 in that city, believing that the attraction of the Columbian Exposition would add to the instruction and benefit of the body by so doing. The invitation was gratefully received and action thereon referred to the coming convention.

The work of the mid-year meeting was very happily assisted by the attentions and entertainment offered by the local exchange of Indianapolis, and that body was in turn greatly benefited, stimulated and encouraged, as it had hoped to be by the presence and discussions of the national directory. The idea of the greater advantage to local bodies as well as to the national association, by having the mid-year meeting in one of the smaller cities which could not hope for some time to come to be in condition to receive and entertain the larger meeting of the whole body in convention, was very fully demonstrated, and it was the unanimous opinion of the directors that this practice should become a permanent one, with perhaps the exception of the year 1893, on account of the benefit it would be to all concerned to meet as suggested by the Chicago exchange in that city during the World's Fair, an opportunity which in all probability would not occur again for many years to come.

MISSIONARY WORK.

This field of endeavor, as represented by personal visitation of the secretary, has not been as extensively worked as in some previous years. In accordance with instructions given at the mid-year meeting in response to the urgent request of the director from Omaha, the national secretary made a trip to that city immediately after the close of the meeting. This visit was a fruitful one. The exchange in Omaha was evidently in need of some outside encouragement and your secretary endeavored to furnish it to the best of his ability. If the success of the meeting held can be considered a criterion, then the visit was not in vain. I take great pleasure in stating that I met with a most satisfactory and flattering reception; all that I had to offer was received in an earnest and interested manner, and there was every indication that the body of men connected with the Omaha Exchange were intelligently eager to profit by all that could be presented to them out of the experience of their sister exchanges as communicated to them by your missionary. I took occasion to say at that meeting, and I am pleased to repeat the same at this time, that in view of the fact that only three short years ago the builders in the city of Omaha had no vestige of organization, the advance they have made is most wonderful. While this exchange has, in common with many others, particularly new ones, endeavored to do some things that it was not wise to attempt at present, and has been obliged to retreat from positions taken, still the greatest encouragement lies in the fact that the net result of its efforts is a great gain over previously existing conditions. From Omaha the trip was continued to St. Louis where a most extraordinary improvement was found to have been made since my last visit. The St. Louis Exchange had been removed from the old and inappropriate quarters so long occupied to new, light and commodious rooms in a modern building. The delegates to this convention can bear witness to the fact that the St. Louis Exchange is now well located, but they cannot comprehend what a great step in advance has been taken, and from which I am sure the exchange will never recede.

A very interesting noon-day meeting was held at which there was a very full attendance and marked interest shown in all the national secretary had to offer, as well as particular interest in everything to do with the coming convention.

From St. Louis the trip was continued on to Cincinnati where the secretary was met by Brother John S. Stevens, of Philadelphia, and with whose valuable assistance two meetings were held. One in the exchange rooms, which was very fully attended, and when addresses were made on the conduct of exchanges and methods recommended by the National for their improvement and advancement. The second meeting was held in the rooms of the Real Estate Exchange, where special arguments were presented by your representatives to interest that body in the efforts being made by the Builders' Exchange to secure a building of their own. The ideas advanced by us seemed to be heartily appreciated by the gentlemen present, and we left Cincinnati fully impressed with the conviction that the Builders' Exchange of that city would soon either on its own motion or in coöperation with the Real Estate Exchange have the satisfaction of owning a building.

In addition to these two important visitations the secretary has made several short trips to assist in organizing exchanges which have not yet affiliated. But missionary work is not wholly comprehended in these personal visits, for the correspondence which grows larger and larger from year to year must necessarily partake very much of this nature, and calls of this kind are so pressing that time is growing less and less available for journeys of a purely missionary character.

PUBLICATIONS.

The work of disseminating the recommendations and ideas of the National Association has been actively continued throughout the year in the department allotted to us in the columns of *Carpentry and Building*.

Of the subjects treated the following list will give a partial idea of the scope of the work: The editorial articles have been on "Improper Demands by the Architect," "Coöperation and the Labor Problem," "Arbitration," "Settlement of Disputes," "Value of Decisions by Exchange Boards," "Necessity for Associated Effort," "Government of Builders' Exchanges," "The Change Hour," "Advantage of Exchanges to Builders," "Scope of Exchange Work," "Practical Arbitration," "Paid Secretaries for Exchanges," "The Benefit of Ideas," "Value of National Association of Builders to the Workmen," "Relation of Contractor and Material Dealer," "Necessity for Sustained Effort," "Builders' Methods," "Rights of Lowest Bidder," "Arbitration and Apprenticeship," "Character of the National Association," "Powers of an Exchange," "Readjustment of Relations of Employer and Workmen," "The Uniform Contract," "Strike-Lockout in the Granite Industry," "Exchange Buildings," "The Newspaper and the Exchange," "Mechanical Trade Schools," "The Rights of Employer and the Rights of Workmen," "Social Features of Exchanges," "The Situation at Homestead," "High Standard for Membership in Exchanges," "Individual Effort," "Lesson of the Switchmen's Strike," "Codes of Practice," "Contractor and Architect," "Relation of the National Association to the Local Exchange," "Possibilities of a Builders' Exchange," "The Value of Example," "The Value of the National Association to the Individual," "Benefits of Organization," "Forms of Organization," "Duty of Members in an Exchange."

Besides these editorially discussed questions, there have been many other subjects touched upon as demonstrations of conditions existing among builders in various parts of the country. The department under the head of "What Builders are Doing," has had an average of two pages per month devoted to it, in which such facts as have seemed to be of interest and importance have been recorded, and action of filial bodies have been given currency.

Whenever some satisfactory thing has been accomplished by any filial body due notice of it has been taken and sister exchanges advised to do likewise. Reports of the last convention at Cleveland and of the mid-year meeting at Indianapolis have been very fully published. An account of the dedication of the new building of the Buffalo Exchange has been given. Conditions existing in regard to strikes or lockouts in which builders would be interested have been gathered and after careful editing published for the information of our readers.

A very exhaustive comparison and criticism of the conditions and requirements of a form of contract prepared by the city architect of one of the great cities of the country has been published showing anew how great the tendency is on the part of the architect when left free to do as he pleases in the matter of contract, to impose onerous and violently improper conditions upon the builder.

Social entertainments given by the various exchanges have been noted in as much detail as possible, in the hope that hints and helps to similar affairs would be given to other bodies, for social entertainments are oftentimes the vehicle by which better and more lasting benefits are initiated.

A very valuable comparison of methods prevailing among various builders in the cities connected with the National Association was made quite early in the year and proved most interesting and instructive, attracting a great deal of attention and comment.

In addition to our publications in the columns of *Carpentry and Building*, an edition of 5,000 copies of the "Report of the Sixth Convention" has been printed and largely distributed, many copies being sent on application to leading colleges and educational institutions throughout the country.

The very admirable address of President McAllister, delivered at the sixth convention, has been printed and distributed in large numbers and is still in demand. Besides these two special publications a very large amount of our literature of previous years has been distributed in response to calls from new organizations and other inquirers.

That all this work of distributing by publications of various kinds, the ideas, precepts, principles and policies of the National Association is valuable, is shown in the correspondence excited thereby which is constant and increasing. It is quite evident that what is done in this direction is not lost, although it is to be regretted that more builders do not find it possible to subscribe for the official paper, and devote time to reading the matter presented for their information and instruction. Active criticisms would be welcomed most heartily and would, no doubt, be productive of greater efficiency in the work. In this connection it is interesting to note that contemporary journals as well

as periodicals devoted to the study and discussion of social problems have repeatedly quoted from, and sometimes wholly reprinted articles published by the National Association. This shows that our work is having a wider effect than perhaps appears to the observer who limits his conclusions to the immediate result obtained from our efforts.

EXCHANGE BUILDINGS.

The ownership of buildings by local exchanges has been growing in favor. During the year the Buffalo Exchange has finished and dedicated with appropriate ceremonies the very beautiful building, plans of which were exhibited at the last convention. Invitations to these dedicatory exercises were sent to the officers of the National Association as well as all filial bodies, and were accepted by quite a number of the officers and directors of the National Association and by individual members of sister exchanges.

This affair was most satisfactorily handled, and all who attended were delighted with the entertainment and with the building which now shelters the Buffalo Exchange and affords office privileges to its members. The report from the Buffalo Exchange will undoubtedly give full details of the building for the information of delegates, but it is eminently proper for this report to state most emphatically that the work of the Buffalo Exchange in this particular is highly satisfactory as an exemplification of the practical application of the advice of the National Association to all filial bodies in the matter of ownership of buildings. The building is most happily conceived in plan and development and secures to this filial body a home of which it may well be proud and which will furnish for all time to come a bond to secure it in permanency and effectiveness.

The Milwaukee Exchange has pushed its building enterprise to completion, and though at this writing it has not been dedicated it probably will have been opened for exchange purposes before this convention meets. This filial body may well be congratulated upon the speed with which they have followed out the recommendations of the National, furnishing to their sister exchanges a further example of the advantage of holding a property which shall at once be the home of the exchange and a bond to hold the body more securely together. A description of the building is looked forward to with the liveliest anticipations, in the report from the filial body in Milwaukee.

The Baltimore Exchange has not yet broken ground for their new building, awaiting, I believe, the expiration of leases on buildings now standing on the lot of ground purchased. Their plans, however, are fully matured and at the earliest possible moment a start will be made to erect a very complete building for exchange and office purposes, which when completed will reflect credit upon the Baltimore association and be an added testimonial to the wisdom of the National Association's recommendations in this direction.

The Louisville Exchange has been actively at work securing the necessary funds for a building, has a site selected and hopes in the near future to bring their plans to fruition.

The Detroit Exchange has made one important step in advance toward the ownership plan, by leasing a whole building to devote to the interests of the exchange. No doubt it will before long see the practical value of being landlord instead of tenant, and take the necessary steps to secure this advantage which will at the same time emphasize the importance of the exchange existence and give it a recognized place and power in the community.

A similar step has at last been taken by the oldest organization affiliated with the National, namely, the Mechanics' and Traders' Exchange of New York city. This body has removed from the very insufficient and poorly located rooms it has so long occupied upon Vesey street, and taken quarters uptown on Twenty-second street and Fourth avenue. This change is very significant, inasmuch as it marks definitely that the true location of rendezvous must be central. There is no doubt that an impetus will be given by this move to the project for the erection of a building, a building which shall adequately represent the great interests of the builders in the metropolis of the country. It may be truly asserted that the builders in all the affiliated bodies of the National look to the builders of New York for an example in the form of an exchange building, which shall fitly and fully emphasize the important place that our great calling really occupies among the industries and interests of the country; a building to which we may all point with pride and from which we may learn lessons to guide, instruct and stimulate us in our smaller communities.

In almost every exchange the feeling is manifestly gaining foothold, that the ownership of a building which shall be a home for the exchange, is one of the most essential elements to success in permanent and effective establishment of the local bodies. Not a year has gone by since the establishment of the National Association and its announcement of belief that such undertakings are not only legitimate but full of promise for the best life and opportunity of builders' exchanges, that great steps have not been taken in support of this theory by one and another of the filial bodies. While at the birth of the National seven years ago no one of the builders' exchanges had a vestige of ownership in the building they occupied, today finds us with six exchanges in full possession of completed buildings, one exchange with land purchased and plans made, and two exchanges with the project well under way.

The value of property thus far obtained and held by our filial bodies under the stimulative advice of the National Association falls but little short of two millions of dollars.

Is not this a remarkable showing and one that promises much for the future influence and importance of builders in this country? No other country in the world can show like enterprise by the organizations of the building fraternity.

THE UNIFORM CONTRACT.

During the past year that valuable work of the National Association, the "Uniform Contract," has received an unusual amount of attention, in several directions. It has been noticeable that for some reason or other, probably because of the continued agitation of the subject from this department, assisted by the efforts of individual members of the local bodies, a new and widely scattered demand for the document has developed, not in large quantities but for single copies as specimens and from all parts of the country, particularly in places not within the affiliation of the National, even as far away as Salt Lake City in Utah. Interest in this form manifests itself also in renewed criticism which is most welcome, for such examination denotes a consideration of the method proposed which in itself acts as an advertisement, and if intelligently applied will be productive of a clearer apprehension of its purpose and larger use. There has, however, been one attempt to supplant or at least weaken the authority of the form, which calls for special comment, inasmuch as it emanated from a constituent body of the American Institute of Architects, the association which has joined with us in preparing and recommending this document for general use.

The Boston Society of Architects, ignoring the fact that it is a Chapter of the American Institute, and also that at the annual convention of that body held in Boston in the fall of 1891, in which it participated, the acts of the Joint Committee on Uniform Contract were approved and the committee continued, proceeded, very soon after the said convention, to prepare, in consultation with legal advisers, a close but most inconsequent criticism of the standard form, distributing the same with a certain "Suggestive Form of Contract" to its members, advising them to still follow their individual preferences in the matter of contract forms, rather than use the form regularly and properly approved by the National Association representing their profession. Now there can be no possible objection to fair criticism of the "Uniform Contract," but in this case the criticism was not properly applied and an effort was illegitimately made, the result of which if successful would be productive of the very evil which the bodies who framed the standard form aimed to eradicate or prevent, namely, diversity of forms of building contracts. The National Association of Builders has a right to expect from all its constituent bodies, loyalty to the method which it has united in establishing to produce equity and uniformity in this, one of the most important relations which the builder is called upon to assume in carrying on the business of building; and the National Association of Builders has also a right to expect loyalty on the part of constituent bodies of that national association of architects with whom it has joined in this important work. If constituent bodies of either of these national associations desire to suggest amendments or changes in the standard form there is a proper way to do it, and but one proper way, and that is by referring their suggestions to the Joint Standing Committee on Uniform Contract. No constituent body of either party has the right to undermine the great work undertaken, by independently proceeding to supplant the form with some other or by advising its members to ignore altogether the Uniform Contract and continue on perpetrating diversity and confusion in contract forms.

The American Institute of Architects and the National Association of Builders, five years ago, deliberately adopted the principle that in framing forms of building contracts the builder and the architect had equal rights; they still further recognized the importance and value of uniformity; and proceeding upon these lines prepared, issued and recommended the "Uniform Contract." So long as any local body maintains its affiliation with its central body it should so proceed and should so order its actions as not to handicap or render nugatory the efforts which are instituted by the central body. It may not, it is true, always fully approve of the methods which the central body may adopt, but it is bound at least not to take active measures in opposition thereto except in proper and legitimate ways. The Boston Society of Architects has in this matter ignored the principles which its national body has regularly and fully recognized and adopted, namely, that the builder has equal rights in framing the forms of contract he is to be a party to, and has proceeded as an independent body to do what it can to overthrow that principle as well as prejudice and embarass the purposes not only of the body of which it is a Chapter but also of that body with which the American Institute has united for this specific purpose and to which it is in honor bound.

It is unpleasant to note that although the attention of the Boston Society was courteously called to the conditions and obligations existing between the two national bodies, it, with considerable asperity, repelled the right of any one to criticise its acts, although it at the same time maintained its entire freedom to criticise the acts of others. This will be recognized as a familiar attitude on the part of architects as a class. I have given considerable space to this particular manifestation, for it seems to me to involve a principle which ought not to be lost sight of, and demonstrates that there is a failure among architects as a class to comprehend the purpose underlying the establishment of the "Uniform Contract," and also shows lack of recognition among them of their amenity to anything except their individual desires.

Builders will gradually learn by such examples as this that in the matter of their rights as to forms of contract which they are to sign, as well as in other directions, it is only by united and persistent endeavor that proper relations can be secured and maintained. You may never hope for someone else to be considerate enough to deal justly by you, you must rely upon yourselves for every advance out of the slough into which you have fallen.

In pleasant contrast to the condition of things above described was the meeting of the Joint Committee on Uniform Contract, to consider for the first time since its establishment a revision of the standard form.

The report of your delegates to that committee will give you in concise form the result of that meeting, in connection with the views of the committee in relation to more universal use of the document. I can only supplement their report by saying that the meeting, in which I participated in an advisory capacity as well as scribe, was most harmonious, and it was particularly gratifying to note that many of the points, the importance of which your original committee found very hard to impress upon the architects who first sat in council with them five years ago, are now considered by the architects themselves as most essential features. I feel assured that the simplification of the form which resulted from this meeting will aid very much in its increased use. The shortening by some five or six hundred words will in itself prove a great card in its favor, for it is now without exception the shortest building contract in general use. I note in the Underwriters' National Convention that our contract was very favorably mentioned. The insurance men have, to use a common phrase, "caught on" to the advantage of uniformity in matters of insurance.

I beg to suggest that the committee in their report cannot too emphatically urge all members of filial bodies to insist for their own protection in the use of this form whenever they are called upon to sign a contract, and further urge all filial bodies to keep a supply on hand, and periodically send out specimen copies to all architects, as well as to their own members, to keep the form in mind as a live issue. Once sending is not enough, people are forgetful, and one of the functions of the local body is to keep those with whom it comes in contact reminded of the things that are done and are being done for their benefit. Printed slips should accompany each specimen copy with publisher's address, prices and other information.

Before leaving this matter of the Uniform Contract I wish to warn all members of filial bodies, through their delegates here assembled, against certain alleged standard forms of contract, issued by parties not authorized by the joint committee. The Inland Publishing Company, of Chicago, is the sole licensee for publication and issuance of our "Uniform Contract," and all issued by other parties under the name of Uniform Contract should be avoided; they are not the same as ours, and builders must not be misled in this particular.

OUR FORM OF ARBITRATION.

The reports from filial bodies are expected to give specific information as to adoption of the recommendations of the National Association in regard to a permanent method for settling all matters of mutual concern between employers and workmen, without permitting them to assume the character of disputes.

In regard to the method itself, it is within my province and function to state that the experience of the past year has not developed a single flaw in the plan we have recommended. It seems to be as near a just method as can possibly be devised, and while many, *too* many, feel as if they do not wish to adopt any preventive measures, I feel confident that when they do reach this point they will find that this plan of ours offers absolute equity of method. So much for the plan itself. I regret that I cannot report a swifter growth of sentiment in favor of taking some trouble, some time for the study of this greatest of social problems, the labor problem. It would seem as if the very fact of being a part of it would spur every builder at all events to make himself familiar with its bearings, but I suppose the truth of the matter is that most employers fail as yet to realize that they are a part of the problem. They seem to consider that it is a subject that will either be settled for them or will settle itself. This to me seems not only a "vain and impotent conclusion," but a most unbusinesslike and heedless conclusion. It also seems like confession of weakness, to be willing to let matters drift without an effort to direct, divert or guide into proper and safer channels those affairs which will not vanish simply because their presence may be ignored. It is within the power of employers more than others to secure peaceful and equitable solution of the problems which confront labor and capital, and it is almost prima facie evidence of business obtuseness, mental ignorance and moral cowardice, to permit others to mangle and distort these problems by one-sided attempts at forceful solution, when by an insistence that they shall not be so handled; when by a steady, intelligent, painstaking course; when by a devotion of time to its consideration as much as would be readily, unhesitatingly devoted to any other branch of one's business, that security could be obtained which is the most essential element to successful business undertakings. Sooner or later this matter will be approached on true lines, and I sincerely believe that when that time shall come, however much the process may have become elaborated, the fundamental principles will still be those which we have discovered and are now slowly pushing forward year after year, as the true basis. I am not discouraged, I am simply disappointed that the principle has not yet been made plain enough for all our great constituency to appropriate it for their own use and benefit. One of my dearest friends recently said, in reference to this subject, "Oh, you are too far in advance of us, you'll have to wait for us to catch up." "Ah! no," I replied, "I am right along by your side, and so is this good angel of peace; I can see it and am only unfortunate in my methods and arguments and so fail to get you into that point of view. When you can see as I do that it is a plain everyday businesslike angel, ready for use in this very year in which we are living."

CORRESPONDENCE.

In attempting in an annual report to give a comprehensive statement of all that goes through the secretary's department or comes to it, during the year, much must be omitted for the reason that there would be little room for anything else to be done or said during a convention. I have frequently remarked that the whole three days of a convention would be none too much to present, not to say anything about discussing, the multitude of subjects that are brought to my attention during the year. We have come together for purposes other

than to hear from the secretary, and however much he may have in his portfolio that might interest and instruct, and, however, thoroughly he may be filled with a desire to avail himself of his single opportunity of the year to consult with you all, the time is too precious in such meetings as this to make much more than a running commentary; therefore in referring to my correspondence I can but give you the roughest sort of sketch from which without even a verbal specification, I ask you to set an estimate as to its value and importance. In the first place I ask your attention to the leading fact that during the year the letters received number not less than three thousand. Some of them of course of a nature that does not require the expenditure of much more thought than any other routine work, but the large part of them making inquiries in a single sentence that demand pages of reply. Letters from secretaries of local bodies asking all sorts of questions in regard to administration, giving facts as to existing conditions and seeking advice upon some point of practice, many of these inquiries I am sorry to say indicate that the writers have not read the reports of annual conventions.

Local secretaries frequently ask for suggestions as to character of people entitled to membership and also express concern as to attendance at "'change" hour or other meetings. Letters from groups of builders in cities and towns not yet connected with the National, asking best detail of organization and advice generally; letters from individual builders asking for information as to practices and customs approved by the National and for assistance in settling some disputed point; letters asking for lists of members of all the various filial bodies; letters inquiring as to standing of individuals morally and otherwise; letters from workmen and workmen's organizations; letters proposing all sorts of schemes for forming joint organizations of employers and workmen; letters are often received which do not take much time to answer although they bring much satisfaction inasmuch as they commend most heartily the work of the National Association; these are quite as frequently from isolated builders from far and near, not connected with any organization, and often in remote districts who nevertheless are interested in what we are doing, gaining this information for the most part from the columns of *Carpentry and Building*, this sort of letter often expressing a wish for uniform specifications and rules of measurement. Letters are not infrequent from professors or students of social problems, seeking information as to our researches and opinions. Not a few letters speak of the difficulty of getting architects to coöperate with builders in seeing better practice and methods in estimating and contracting.

This brief reference to the character of correspondence received will give a faint idea of the tone and extent of correspondence which must go out in response.

The increasing consciousness among individual builders and organized bodies of builders, of need for reform in practices that have slowly obtained foothold, and need for careful and intelligent formulation of methods and system where none have previously existed, as shown in the communications received in my department, make me painfully aware of the inadequacy of my ability and efforts in attempting to properly and satisfactorily meet the demand.

Much that is done gives little token of its value in net result obtained, but I realize that all progress in such affairs must be slow, and must necessarily be accompanied by a feeling of disproportion in the immediate return, to the outlay of time, thought and vitality, and so I am comforted by the conclusion that the work that is being done year by year is not for those years alone but for the years to come as well, and the little gained here, and the little gained there, is the usual process in life as well as nature, and must be so accepted as the true and best way.

Here I may properly end the condensed history of the year of work for which I am responsible, but as has been my custom in past years I take the liberty of adding a few thoughts in the line of

RECOMMENDATIONS.

It seems to me that there is possibility for action by the National Association in the direction of securing more effective committee work than by our present system. I notice that some national organizations have adopted the plan of naming the members of a given committee all from one city, with the purpose of making it practicable to hold many committee meetings during the year, which is almost impossible with a committee composed of widely separated members. This matter it seems to me should be discussed in this convention and if deemed wise put in operation for the coming year. In this connection it seems to me desirable to give the Executive Committee power to create special committees for special investigation during the year. It is possible that some minimum membership should be fixed by the National for local exchanges as a basis and prerequisite for affiliation with the National. At present there are two cases at least where the total membership of the local body is five, hardly enough to fill the offices, and while organization which is so short of adequate representatives as this is better than no organization whatever, there is room for doubt whether so slim an organization is entitled to representation in the national body.

The Joint Committee on Building Law, which we have taken part in forming, has not made any effective move during the year, and it occurs to me that it is incumbent upon us as one of the most active organizations forming this committee to suggest a division of the labors of that committee so that each set of delegates shall have a distinct and positive duty to perform, for at the rate of progress in investigation thus far the ethics of building laws will not be speedily reached by the committee at large. This committee is called to meet here in this city during this convention, but while I appreciate the implied compliment of meeting in quasi-conjunction with us, I feel assured that but little can be accomplished by our delegates at least on the limited opportunity which proper attention to the affairs of our meeting will give them, and I therefore suggest that our delegates be instructed to suggest to the joint committee the advisability of meeting at some other time during the year, with the work divided up as I have previously suggested. I believe much good can be done by this committee in the direction at all events of showing how difficult it is to frame building laws which shall not be unduly burdensome and ineffective on the present basis which attempts to make a specification rather than a law.

I refer again with renewed emphasis to the necessity, in large cities at least, for the local exchange to employ at a proper salary a secretary whose time and talents shall be wholly devoted to the interests of the body. I am more and more convinced as years go on that this is the only sure way in which the best and fullest good can be attained. It is folly, as I have said in almost every annual report, to expect of some one of the members of the exchange that service which he can only give by stealing it from his own business. The secretary of a local body cannot be all that he ought to be, cannot even approximately do all that ought to be done for the body unless he is on deck all the time and armed with a reasonable amount of authority.

Perfection cannot be expected, but surely there is little hope that any advance can be made for the whole interest if you are going to depend upon what some busy man is going to give you out of his life, animated by his sense of what ought to prevail.

Able men, men of fertility of thought, readiness of application and power of study and analysis can be had and they will be worth your money whatever they cost. It should be an axiom of the National Association, that the local exchange, to properly work for the good foreshadowed in our recommendations, must have a secretary competent, and with permanency of employment assured, so that he may have a chance to develop and advance the interests which we all admit are worthy of great endeavor. With such secretaries the work of the National Association can be done with greater certainty and success than the national secretary can ask, with the certainty that he is not imposing on some busy man, for the information which now it is practically useless to attempt to obtain, and can make suggestions for service with the feeling that he may do so freely. My past experience shows me that I cannot expect to get reports and information from unpaid and non-permanent secretaries and we ought not to expect it, but the service suffers because of this condition. Then, too, secretaries of local bodies should feel that it is incumbent on them to make suggestions to the national secretary and help him by showing some new need, tell him of each new difficulty that presents itself. With a good corps of local secretaries the national secretary would eventually amount to something. It has been suggested by someone that a secretaries' organization would be a good thing under the auspices of this body, and that regular meetings for the exchange of views, information and experiences would result in much good. So it would, but first we must have our secretaries men devoted to the work. I repeat, spend some money for your secretaries and they will more than pay you in the returns secured.

Something in the way of a more systematic method of estimating has been anxiously asked for almost ever since the National Association was formed, and from many quarters the inquiries come in. I would suggest that a committee be created to look into this matter and make report of their findings to the national secretary, with power to instruct him to communicate their views to all the local bodies and members thereof. A more complete directory of all exchanges is needed, and local bodies should file full lists of their members with their callings and addresses, corrected at least twice in each year; here again the services of a permanent paid secretary is essential. Such a list would be very valuable and you would enable the central office when necessary to reach all individuals without the necessity of troubling the local secretary, and sometimes the appeals of such a central official are more effective than those of one near at hand.

There is possibility that we ought to make a way for the affiliation of Canadian associations of builders; there are several cases already where they have organized under advice and counsel from us.

I feel compelled to say that I am convinced that it is money thrown away to print so many official reports of our annual conventions. It has been our custom to print 5,000 copies with paper covers and about 250 copies with cloth covers. My experience has shown me that the members at large of local bodies seldom open the reports, and I have noticed large numbers of them lying stacked in exchange rooms. I would suggest that not more than 500 copies be printed, that these be all bound in cloth, and a proper number placed in the hands of each exchange to be kept by them in their libraries as books of reference. Copies specially applied for by interested members could be furnished and also copies sent to libraries that may apply. I respectfully submit this suggestion and hope that action in this direction will be taken.

I would again suggest that local exchanges urge a more liberal subscription by their members to *Carpentry and Building*, in order that our work done in that paper may receive the attention which I believe it deserves.

Especial effort should be made by all local bodies to act in earnest in the recommendations of the national body. I hear too frequently either that nothing has been done, or simply that "the recommendations of the National Association are well thought off." This latter is much worse than adverse action. "It damns with faint praise."

The establishment of separate trade organizations should be urgently pressed by all local bodies. They are essential to the perfect working of the system of arbitration as well as to carrying out many other recommendations of the National Association.

The possibilities for establishment of collection bureaus under the direction of local bodies is one worthy of consideration by a special committee, and I suggest that such a committee be appointed to report to the Executive Committee all that they find in favor or against such bureaus. Some plan ought to be devised to secure in each local exchange a board of reference, composed of an equal number each of architects and builders, to whom should be referred all disputes and disagreements between individuals in either branch. This would be equally valuable to architects as to builders. A special committee on this point would have a large field of inquiry.

There is a loud call for uniform preliminary clauses of specifications. This should be brought to the attention of the Committee on Uniform Contract.

Finally I suggest that all suggestions contained in the president's address and in this report be referred to the Committee on Resolutions and the Legislative Committee, and that the combined committee be instructed to report thereon at the proper time in this convention.

In closing I beg to say one word to the individual delegates present in their function as representatives of local bodies. I am frequently in receipt of letters from interested members of your exchanges, in which they complain that on the return of their delegates from conventions they are full of enthusiasm as to the bountiful and delightful entertainment which has been extended to them by the exchange in the convention city, but have nothing comparatively to report as to the business part of the convention meeting. This, it is claimed, and truly, tends to throw discredit upon the National Association and leads local bodies to question the value of our work.

This condition ought not to confront us, and I recommend most forcibly that each delegate here present arm himself with note book and pencil, follow every report, every address, every suggestion or bit of information coming in the reports from filial bodies, be prepared to inquire, discuss and follow up every item, and then on his return home submit individually and in full delegative report a statement of what you have learned, and I will guarantee that if this is fully and properly done your exchanges will no longer question the value of your service or the value of the National Association.

The remainder of the session was consumed in the reading of reports from the exchanges of Baltimore, Boston and Buffalo, and the session adjourned.

SECOND DAY — AFTERNOON SESSION.

The convention assembled at 2 o'clock, and the reading of reports from filial bodies was resumed and occupied most of the session.

In the discussion of the reports of filial bodies Mr. George Watson, of Philadelphia, said that he would speak of what he feared was not found in the reports, and that was the trade school. Calling attention to the success attending the formation of the Exchange at Wilmington as an evidence of what perseverance would do, Mr. Watson said that while before the establishment of the Philadelphia trade schools but few apprentices were used by builders, that now there are not enough pupils in the trade schools to supply the demand, and the trades unions indorse it and place a preference upon boys with trade school certificates. Mr. Watson spoke long and well upon the benefits of the trade school and the increase of these institutions throughout the land. And it was a duty with the exchanges to aid the establishment of such schools, and hoped that it would not be many years before every exchange would have a trade school under its control. If no other good was accomplished by the National Association of Builders, the giving of a trade to the American youth was worth the effort. Mr. Watson closed with a strong indorsement of the work of Colonel Auchmuty of New York.

B. W. Blair followed with a stirring speech in favor of trade schools, where the apprentice was taught his trade protected from the inclemency of the weather and the immoral influence of apprenticeship among workmen.

A member asked the convention if, in setting up a code of practice between builders and architects, it was best that this be gotten up by joint action, or should it be gotten up by the Exchange and given to the architects?

A Buffalo representative said that they had done the latter, and had to recall it and formed another with architects, and this was lived up to.

Mr. Sayward said that in Boston the architects would have nothing to do with the builders in the matter of a joint agreement.

In Omaha a code was arranged by architects and builders in conference.

Mr. McMurty, of Louisville, said that they adopted a code of rules four years ago, and notified the architects. The architects took no immediate action, but finally the matter came to a deadlock, and the architects were induced to make a joint agreement.

REPORT OF THE COMMITTEE ON LIEN LAW.

ST. LOUIS, MO., February 14, 1893.

To the National Association of Builders:

Your Committee on Lien Law would respectfully report, that after a number of sessions and much correspondence, they have reached the following conclusions, to wit:

Inasmuch as the present lien laws in the various states differ so materially and the conditions existing are so much at variance, we deem it inexpedient for the National Association to attempt to frame any general law, but to refer the whole subject matter to the affiliated exchanges connected with the National Association, to use their influence with their respective legislatures, to amend existing laws (where they are not satisfactory) or to enact new ones that may in the judgment of the local exchanges meet their requirements.

They therefore recommend the adoption of the following resolution:

"*Resolved*, That the standing Committee on Lien Law be discharged from the further consideration of the subject."

Respectfully submitted,

JOHN S. STEVENS,
Chairman, for the Committee on Lien Law.

REPORT OF COMMITTEE ON UNIFORM CONTRACT.

ST. LOUIS, February 14, 1893.

For five years the "uniform contract," adopted in 1888 by the Joint Committee of the American Institute of Architects and the National Association of Builders, has been before the public.

The fundamental principles therein expressed have been tested and approved by time, but, while the instrument has added to the number of its friends among architects, from year to year, and owners have acknowledged its evenhanded fairness to both parties and executed it readily, there still are many architects who do not use this form of contract.

A large number of those who still cling to old forms are doubtless those whose conservatism impels them to donbt new, though better methods, while others have failed to employ the standard form for the reason, which they frankly admit, that the older forms give to them and to their clients, the owners, a greater advantage over the builders. This is an entirely improper position, for a contract of this nature should in no way give more advantage to one than to the other party to it, and it has been the purpose from the first to provide in the uniform contract an instrument which should give evenhanded justice to all concerned in it.

It is very evident that many architects will not voluntarily adopt this form, either because of their conservatism, or from nuwillingness to give up an unfair advantage, or from ignorance of the terms of the document, and it is therefore important that the builders themselves should decline to sign other forms.

The more general use of the uniform coutract may be said to depend to a very great extent upon the insistence of builders that this form and no other is acceptable to them. This attitude is strongly urged by your committee.

During the last year meetings of the joint committee have been held, and we now present to you a revised form which, in our judgment, covers the same ground in more direct language, and adapts it better for use of sub-contractors for their particular portions of a buildiug.

No changes were made without careful consideration and full discussion, and without entering here upon a discussion of the merit of each change, we express the belief that experience will indorse our action. In this action your committee has gone to the length of its authority.

The uniform contract is "adopted and recommended for general use by the American Institute of Architects and the National Associatiou of Builders." Upon your individual effort depends its general use.

GEORGE C. PRUSSING,
H. H. EDGERTON,
JAMES I. WINGATE,
Committee on Uniform Contract.

N. B.—A copy of the uniform contract, as revised, is attached hereto. [Published in full in THE INLAND ACHITECT for January, 1893.—EDITOR.]

Mr. Leighton, of New York, submitted a resolution to the effect that it was the sense of the convention that the Exchanges should formulate a code of practice between architect and contractor, inviting architects to assist in the formulation. That if architects refused to confer, that exchanges should act alone and notify the architects of the date when the code would be in force.

After some discussion the matter was laid over to the next session, and the meeting adjourned.

THIRD DAY—MORNING SESSION.

The convention was called to order at 10:20 A.M., President Ittner in the chair.

The secretary called the roll, and the resolution submitted by Mr. Leighton at the previous session was taken up as follows:

Resolved, That the National Association recommend filial bodies to invite architects in their respective districts to meet them in committee and formulate a code of practice to be followed in making estimates, awarding contracts, etc., and in the event of architects refusing to confer, to formulate such code of practice without conference, and notify architects of the same, setting a time for such practice to be put into operation.

Edward F. Dodson: I desire to offer an amendment to that motion, and before making that amendment, I wish to state that the Builder's Exchange, of Minneapolis, has heretofore understood that the National Association of Builders always objected to and discouraged the arbitrary rules laid down by trades unions, which they have insisted on their people adopting, and we have also understood that the National Association of Builders advocated arbitration in all matters where it could be done. As an amendment to Mr. Leighton's motion, I move that the Builder's Exchange, of Boston, be instructed to ask the architects to confer with them in drafting a code of rules governing them in submitting and receiving bids, letting contracts, etc., and if the architects refuse to do so, that the Builder's Exchange, of Boston, use its best endeavors to have the matter left to arbitration.

M. B. Madden, of Chicago, seconded the motion.

Secretary Sayward: I desire to offer a substitute. The substitute I have to offer depends upon an understanding of the code as adopted and recommended by the Association, and I will refer to the action which was taken at the Philadelphia convention at the time the codes were finally perfected. The first clause was: "The National Association of Builders, in convention assembled, recommends all filial bodies to secure the coöperation of architects in their various localities, through organized bodies, when possible, in the establishment of the following code, in order that there may be a well-defined and recognized system or practice under which estimating should proceed, bearing the approval of both architects and builders"; so that it appears that that is the ground we stand on in recommending filial bodies, that they proceed in this matter by seeking the coöperation of architects. Now, we do not need to repeat that, so it seems to me that something of this fashion will be the thing for us to adopt:

WHEREAS, Many filial bodies have found, in attempting to establish the code of practice recommended by this association as one which should prevail in the relations between architect and builder, that the architects as a class decline to coöperate in such establishment; it is, therefore,

Recommended, That filial bodies should not, because of this discouragement, abandon this just cause, but while refraining from coercive measures which partake of the objectionable features of the boycott, should repeatedly and persistently press for the recoguitiou of some such codes until they are adopted in the way and manner comprehended in the original recommendation.

George C. Prussing, of Chicago, seconded the substitute.

President Ittner: The amendment to the original motion being withdrawn by Mr. Dodson, the substitute to the original resolution was in order.

Secretary Sayward: I desire to say, Mr. President, in support of presenting this in such a form, that the desire of the Boston Exchange will be met by some such action as this. We have simply brought forward the condition of things in our body in order that we might get some such action in this matter that would be a guide not only to us, but to all filial bodies, and to emphasize again, as was emphasized at Philadelphia, that the way for us to proceed, even if it does take time, is by the cooler, calmer, and more pleasing way of coöperation, rather than by the more immediately effective measures produced by arbitrary acts.

G. E. Leighton, of Boston: I would like to say, as I offered the first motion perhaps hastily, that I don't care how we arrive at this result, and that if I reiterated anything you have previously voted on, it will be perhaps harmless to have it spoken of at this time. We only want to arrive at a proper result. It seems to me that this is one of the very important things with which we should deal and consider, and it is a thing, if it is properly brought out, that will do us a great deal of good. It is a subject which we approach with a good deal of timidity, knowing the difficulty which will be encountered in formulating such a plan as will not seem like a boycott or an arbitrary movement. We don't wish to do anything in a hurry, and it ought not to be done in a hurry. We want to bring it to the attention of the convention and get an expression of opinion, and then take plenty of time. Since the Philadelphia meeting there has not been much done, and if we can agitate it now and get something done, we will be taking another step forward. This cannot be done quickly, but it should be started, for it is important, for it embraces the whole gospel of our building transactions. It does not involve the relations with the architect especially, but when we have a proper code of practice between the architects and ourselves we also have a code between ourselves as builders, and there can be no misunderstanding under it, or should be none, as to what is the proper thing to do in individual cases. That is what we want to arrive at. Now, in this discussion we hope to find the proper method, and I would suggest, while I am up, that one method I think of might be well as a starter: to have each association select certain men who are on friendly terms with certain architects and have them approach them at the right time and place and start this thing in their minds, not in an arbitrary way, for we want to be very careful about that in our relations with the architect, but start it in a quiet way and get it into their minds so that when we do ask them a little later on to meet with us they will be prepared; they will have thought of it and they will appreciate that our movement is not be an arbitrary one, and that we are trying to do the right thing and to help ourselves. I think that might be one good suggestion to be carried out by the different bodies, that they have these particular men who are on good terms with certain architects introduce the subject to them in a very tender way. Our relations with our architects are not particularly strained; perhaps not more so than they are in any other place. We are, as a general thing, on good terms with our architects in Boston, though we do not have a code of practice or anything that will lay down a strict law whereby we should deal, and that is what we want to do, and what I think is one of the most important things for us to try to arrive at in this convention; we want some line of dealing with the architects in the matter of giving estimates and awarding contracts.

The substitute motion of Mr. Sayward was unanimously adopted.

THIRD DAY—AFTERNOON SESSION.

After roll-call action regarding proposed amendments to the Constitution were taken up. Article IV was amended by the words "and serve until the election of their successors."

Amendment to Article VII was discussed in several forms and finally rejected, the article remaining unchanged. Article IX was amended to read as follows:

The annual dues for the ensuing year shall be assessed by each convention upon the recommendation of the board of directors. It shall be assessed per capita of membership in exchanges in organizations that have gained membership in this association, and be payable through the officers of the exchanges. This assessment will be due immediately upon the adjournment of the annual convention, and must be paid thirty (30) days prior to the election of delegates to the next annual convention. Default in paying this assessment shall forfeit membership and representation. Payments may be made on account of the per capita tax during the year.

C. W. Gindele, of Chicago, presented the following resolution:

Resolved, That the proceedings of the mid-year meeting regarding the death of Mr. Leopold Idlitz, of New York, be made the proceedings of this

convention, and that the secretary be instructed to reserve a page in the minutes of this convention to be used as a memorial page to him.

The resolution was adopted.

The Committee on Resolutions reported in favor of approving the construction of the Nicaragua canal, but it was defeated by a close vote.

A resolution requiring the secretary to visit each exchange during the year was lost, and also one offered by the San Francisco Exchange asking congress to pass compulsory arbitration laws.

A resolution presented by the Louisville Exchange in the nature of a boycott scheme against architects was laid on the table.

A resolution appointing a committee upon revision of the Constitution and By-Laws was passed.

J. Milton Blair presented a resolution, which was passed, providing that each exchange print 200 copies of its annual report and mail copies to each affiliated body sixty days before the next annual convention of the National Association, so that they can be read by the delegates and the important features discussed.

The committee on nominations and time and place for holding the next convention recommended that the next convention be held at Boston, commencing on the second Tuesday in February, 1894. It also reported Ira G. Hersey, of Boston, for president; Hugh Sesson, of Baltimore, for first vice-president; Charles A. Rupp, of Buffalo, for second vice-president; William H. Sayward, of Boston, for secretary; and George Tapper, of Chicago, for treasurer.

The report was adopted and the president ordered to cast one ballot for each of the officers named.

The delegates at large which form the board of directors were named by the several delegations as follows: Baltimore, Noble H. Creagir: Boston, James F. Wingate; Buffalo, H. C. Harrower; Chicago, John Rowle; Cincinnati, L. B. Hancock; Cleveland, Arthur McAllister; Denver, J. D. McGilvray; Detroit, Joseph Miles; Grand Rapids, W. T. McGurrin; Indianapolis, W. P. Youngclaus; Louisville, G. L. Smith; Lowell, Moody D. Prescott; Milwaukee, Henry Ferge; Minneapolis, Emory F. Dodson; New York, Stephen M. Wright; Omaha, N. D. Hussey; Philadelphia, Stacey Reeves; Providence, W. W. Batchelder; Rochester, H. H. Edgerton; St. Paul, J. W. Makinson; St. Louis, Charles B. McCormack; East Saginaw, John H. Queellman; Wilmington, A. S. Reed; Worchester, O. S. Kendall.

After the election of officers and directors was announced by the secretary the customary speeches of acceptance were made by the officers and a vote of thanks passed by a rising vote to the city of St. Louis, the Merchants' Exchange and the press (this was represented almost wholly by the *Republic*, which contained the only full reports), and the convention adjourned. The official stenographic report was made by S. C. Ormsby, of the Mills building, New York.

SECOND ANNUAL CONVENTION OF THE SOUTHERN CHAPTER, A. I. A.



THE second annual convention of the Southern Chapter of the American Institute of Architects was called to order January 10, 1893, at 12 o'clock M., in the parlors of the Caldwell Hotel, Birmingham, Alabama, by Mr. A. C. Bruce, of Atlanta, Georgia, president.

On behalf of the architects of Birmingham, an address of welcome was made by Mr. Charles Wheelock, and also by Mr. Fox, mayor of Birmingham, and was responded to by the president and vice-president. A recess was then taken.

2:30 P.M. On reassembling the roll was called and the following Fellows were in attendance upon the convention, namely: A. C. Bruce, Atlanta, Ga.; D. B. Woodruff, Macon, Ga.; W. S. Smith, Birmingham, Ala.; T. H. Maddox, Birmingham, Ala.; D. A. Helmich, Birmingham, Ala.; Charles Wheelock, Birmingham, Ala.; L. F. Goodrich, Augusta, Ga.; C. C. Burke, Memphis, Tenn.; E. G. Lind, Atlanta, Ga.; James M. Maddox, Birmingham, Ala.; W. P. Tinsley, Lynchburg, Va.; F. L. Rousseau, Birmingham, Ala.

The president, Mr. A. C. Bruce, of Atlanta, delivered the following address:

Officers, Members and Friends of the Southern Chapter:

It is with pleasure I meet you at this our second annual convention, and in laying down the office to which your partiality elevated me a year ago, it seems proper that I should briefly describe what we have endeavored to do the past year, and also to bring before you such suggestions as have occurred to me for the perfecting of our organization. The work thus far has been mainly initiative, placing the objects of the Chapter before the architects of the South, securing a charter, and in general correspondence to awaken an interest among those we hoped and felt would join with us in attaining our end. Our worthy secretary has been very efficient in discharging his duties by correspondence and keeping before the profession in the columns of our organ, the *Southern Architect*, the need of organization, and several times during the past year I have addressed the members and others, impressing upon them the importance of unity of action in this the commencement of our organization. This large and intelligent body of representative men of the several states before me today is but the advance guard of what we hope our annual conventions will be in the future. May the best interest of each and all, and of the profession in general, be promoted by our assembly in this hospitable city of Birmingham.

As yet we are but young in the development of our profession in the South, and have had but limited means to encourage its progress as a profession, yet I hope that the younger members will devote all their spare time to the study and development of architecture, from a theoretical as well as a technical standpoint, and endeavor to give a freer scope to its artistic influences than the older members had in their meager opportunities of study.

I can remember thirty years ago, when quite a young man, I asked an English master-workman how I could become an architect. He replied, "Work in the day and learn the practical; study at night and learn the theoretical; study the works of Nicholson, Pugin, Ruskin, Jones," and others he named. We had not then the benefits of the superior photographs, nor the later photo-engraving work, nor the still later beautiful and artistic photogravures to assist us, but relied wholly on the engraved work in the foreign journals, for as yet architectural publications in this country were very rare, the only ones I could get being Downing's "Country Homes," and later, about 1857 or 1858, I believe, the publications of Samuel Sloan, of Philadelphia, which found a ready sale in the southern states, and really from his studies sprung those elegant southern mansions still seen throughout the states, emblems of an era of refinement slowly passing away. But what do we now see opening to the student of architecture? In every state technical schools with architectural studies as a part of the curriculum; architectural photographs giving a tour through the Land of Flowers and Art; all the principal cities of England, France and Italy photographed, so that with a few hours of study he can explore the scenes of months of travel, which formerly only the wealthy and the professor could enjoy.

And not only in the old countries, but in our great America the march of architectural progress has kept pace with the spirit of the times. And even in this country, it was one of our southern brethren, Richardson, that, like Michael Angelo of old, had greatness thrust upon him which he did not expect, and perchance it came so thick and fast he had to give up the ghost and leave an unfinished style for the ambitious young men to work out, not on the conditions of Angelo at St. Peter's, that no salary should be inserted in the agreement, but on the contrary the siren cry of the Angelo of today is, "What about the commission?"

Yet it is a very important fact in this day and generation to keep up the standard of proper remuneration for services rendered. How necessary it is then that as a profession we should possess the requirements of ability and business tact necessary in the administration of our business, that we may be able to give our clients value received for the small compensation we ask, and in the great revival which we see in the works of the rising generation of young architects, the success of those who have earned a reputation, has been the result of close study, actuated by artistic aspirations worthily won among the closest competitions.

As a profession architecture can boast variety in its labors; great scope is given the imagination and artistic mind as it is unfolded in the studies of design and the theory of construction, the latter being the great object of the means intended, yet not losing the artistic treatment which should always be studied, and after the ideal is formulated on the board, then the masterpiece on which depends the successful carrying out of the work is the specification —defined by one writer as "a written statement of particulars for a certain proposed structure," to formulate which the architect should first have a perfectly practical knowledge of the profession. This is considered one of the most difficult branches of the profession, a duty which cannot be delegated to the draftsman or any other employé. How often does an experienced practical builder smile to himself at many of the absurd volumes of specifications exhibited to him to tender on, or execute work from, and which is often the cause of the great difference in bids. It should be simple in language and expressed in a clear, concise way.

As a body we have a great work to accomplish in the development of southern architecture. Our climate demands entirely different planning, and there is a large scope of country to be worked, our prosperous cities, thriving towns and growing hamlets, all add to its various wants and studies. We have not yet reached the high building craze of our western brethren; we have plenty of room to spread out on, and plenty of fresh air, and our genial climate demands that we plan for comfort and make room for the occupants without stint or cost.

Let us then, in this our second annual convention, endeavor to assist each other in discharging the trust in our hands, in every good word and work, as brethren engaged in a profession, as a labor of love as well as for the money benefits we derive, and when we meet on the bloodless field of competition, either in Alabama, Florida, Texas or Georgia, or in the Lookout Valleys of Tennessee, may we not forget the interests of all as a whole and act as if we were destitute of honorable sentiments, and not worthy of association. Let us, then, coöperate with our eastern and western brethren in the profession and reap the benefits to be derived from a united interest in our chosen profession.

I will close by quoting a sentence taken from the *Journal of Architecture*, of Philadelphia, which expresses fully the object of our assembly today: "Architects as a fraternity should, by their intermingling and interchange of ideas, by their unremitted and unanimous action, and, if possible, in a broad and all-embracing organization, working from within by and upon its membership, attempt to render the methods and practice of architecture more uniform, raise the average standard of design, and by making all true criteria of architectural merit more generally known and more universally adopted, pave the only highway to the popularity of true architecture which seems at present to be open."

The President: The next thing in order is the report of the Board of Directors.

The Secretary: As secretary of the Board of Directors I wish to state that but one meeting of the Board of Directors was held in 1892, which occurred at Atlanta, Georgia, September 1. At this meeting the letter ballot, similar to that used by the American Institute of Architects, was adopted. The Board of Directors also instructed the secretary to have a certificate of membership engraved, with such conditions shown in its face as render it void after the following annual meeting, a copy of which, properly filled out, to be given to each Fellow, upon the full payment of all dues for the current year. A copy of this certificate is herewith submitted for your consideration. It was further ordered that Fellows of the American Institute of Architects requesting membership in this Chapter be excused from furnishing photographs or other drawings as evidence of their professional ability, but in other respects the application blank to be filled out by each applicant and indorsed in the usual way.

The Board of Directors held a meeting this morning prior to the assembling of this convention, and after considering the applications filed in proper form with the secretary, they recommend for membership the following named architects, namely: W. E. Hall, Winston, N. C.; Tom Wood, Sherman, Texas; C. H. Read, Jr., Richmond, Va.; G. W. E. Field, Richmond, Va.; J. G. Barnwell, Rome, Ga.; C. C. Wilson, Roanoke, Va.; J. W. McClain,

Birmingham, Ala.; E. W. Smith, Lexington, Ky.; George W. Stewart, Dallas, Texas; Harry D. Breeding, Huntsville, Ala.; P. S. Rabbit, Galveston, Texas; J. A. Tempest, Houston, Texas; W. A. Bird, Birmingham, Ala.; William Stanton, Vicksburg, Miss.; W. Chamberlin, Knoxville, Tenn.; T. H. Abrahams, Charleston, S. C.; B. B. Davis, Paducah, Ky.; H. H. Huggins, Roanoke, Va.; F. L. Smith, Lexington, Ky.; George E. Dickey, Houston, Texas; J. Riely Gordon, San Antonio, Texas; Henry C. Holland, Houston, Texas; C. W. Bulger, Galveston, Texas; W. T. Walker, Montgomery, Ala.

On motion of Mr. Helmich the report of the directors was adopted and ordered to be spread upon the minutes of the meeting.

On motion of Mr. Goodrich the letter ballot was suspended and the above named architects were unanimously elected Fellows of this Chapter.

The Secretary reported that a charter had been received from the American Institute of Architects.

The President: Mr. Wheelock, chairman of local Committee of Reception, wishes to make a statement regarding the presence of members of the legislature of Alabama, who are now in the city.

Mr. Wheelock: I wish to state that I have had a conference with several members of the legislature regarding the anticipated bills to be presented to the legislatures of the southern states in regard to laws controlling the practice of architecture, and it is necessary that we now appoint a time to give these gentlemen a hearing, and I move that 3 o'clock tomorrow evening be set as the time for this conference.

The motion was unanimously carried.

At this point Mr. Bassett read an address from Mr. Hubner, editor of the *Southern Architect*, who was unavoidably prevented from attending:

To the Members of the Southern Chapter of the American Institute of Architects in annual session at Birmingham, Alabama:

GENTLEMEN,—No profession is more throughly identified with the material progress of this section of our country, or more instrumental in developing a taste for the beautiful in art, than the men who honor the profession of architecture. No part of our great Republic has cause to be prouder of its representative architects than the South. Along with the wonderful progress of the Southern states since the war, in material prosperity and industrial growth, wealth and power, there has been apparent an encouraging development of the art-taste among our people in its architectural side. This finds expression in numerous grand public buildings and handsome private residences; and this practical art-taste has been promoted and fostered by educated and experienced architects in our midst, whose wholesome influences and whose respect for the classic models of their art have largely contributed in suppressing the vulgar and *bizarre*, and in bringing about among our people the good taste increasingly expressing itself today in the architectural appearance of our towns and cities, in public edifices and private residences, as well as in the tasteful homes of our suburban and rural districts.

In view of these facts it is certainly a gratifying spectacle to see, gathered in this renowned and prosperous city, a body of men who are co-workers in this grand work, who worthily represent their noble professiou, and to whose labor, zeal, fidelity and culture the remarkable development of the art-taste of the New South, already alluded to, is largely due.

The organization of the Southern Chapter of the American Institute of Architects was a happy thought of those who conceived it, and the results thereof have proved the wisdom of their couceptiou, and its practical value to the profession in the South. All honor is due to the founders and promoters of this Chapter, and they will be held in grateful remembrance as long as the beneficial influences of this organization shall exist.

Beginning with a few zealous members, and under many disadvantages, the Chapter has grown and strengthened and expanded its sphere of usefulness. Nor will it cease its wholesome growth until its sphere shall embrace this entire section, and in its membership shall be found the name of every reputable architect in the South. Its objects and purposes are well known to all. The measures to be discussed and the actions to be enforced are all intended to conserve the best interests of the profession and of the public; to elevate the profession to the high plane it is entitled to and to keep it there, and to eugender and promote the fraternity and harmony so necessary to every organization, and whose effects are so well expressed in the old adage "in union there is strength."

Proud of its position as the official organ and literary representative of this Chapter, the *Southern Architect* will leave nothing undone that would foster and advance the objects and purposes of this body. Its management feels the responsibility of its position, but also its opportunities for good works in a noble cause. Its constant aim shall be to do its duty, and to promote whatsoever is true and good and beautiful. To do this to the best advantage, the good will and practical coöperation of every present and prospective member of the Chapter is necessary. Surely we will not be mistaken in the hope that this good will and practical coöperation will be given us now, and in still larger and increasing measure as time goes on.

As your organ and representative in literature, we greet you, and heartily wish all the members of the Chapter, and the profession everywhere, health, prosperity and success during the new year.

The president appointed Messrs. Lind and James M. Maddox Auditing Committee.

The president appointed Messrs. Helmich, Woodruff and Wood, and Messrs. C. Wheelock, Smith and Burke as Nominating Committees.

A discussion by several of the members brought out the fact that the by-laws do not state specifically what should be considered as unprofessional conduct, and that preferring charges against a member for making drawings at a reduced price could be construed as a matter of opinion, and therefore further, as a matter of persecution; and that said by-laws cannot be changed or amended except by publishing the fact at least thirty days before voting upon such a change; and in consideration of the desirability to have specific regulations regarding this and other points that were mentioned, upon motion of Mr. L. F. Goodrich a committee of three was appointed to revise the Constitution and By-Laws, and at as early date as possible, to have the secretary send a copy of same to each Fellow (at least thirty days before our next annual meeting) and to give full notice that the same will be changed at that meeting.

The motion was unanimously carried, and the chair appointed Messrs. Morgan, Lind and H. Wheelock on said committee.

On motion of Mr. D. A. Helmich the convention adjourned till 10 o'clock tomorrow morning.

SECOND DAY — MORNING SESSION.

The president introduced Mr. Lind, who read a paper on the "Relation of the Architectural Profession to the Public."

Mr. G. L. Thompson, electrician, read a paper on "Electricity and its Applications to Building and Equipping Buildings."

The President: The secretary has a paper written by Mr. M. J. Dimmock, of Richmond, Virginia, on "The Practice of Builders Making and Furnishing So-Called 'Architectural Drawings.'" Mr. Dimmock's essay was read by Mr. W. E. Hall, of Winston, North Carolina.

THE PRACTICE OF BUILDERS MAKING AND FURNISHING SO-CALLED "ARCHITECTURAL DRAWINGS."

MR. PRESIDENT,—This is a matter which concerns the profession of architecture generally, but more particularly does it interest those who are located and practicing in the smaller cities and towns where the evil is the greatest.

The southern states in the past were strictly an agricultural district, and consequently the cities were few and the plantations large, and there was little which led to the study of architecture, and the buildings partook more of the practical than the artistic in design. There were public buildings and many planters' houses which were admirable in design and were planned to suit the wants and requirements of the day and climate, and some of these are today worthy of study.

But a new condition of affairs now exists and the new South has become manufacturing as well as agricultural; and, as a consequence, her cities are growing and new towns have sprung into existence, and so new architectural conditions are required. The resources of the South are being rapidly developed, and capital from home and abroad is seeking investment. Great business schemes are projected; and it is a recoguized fact that after maturing a scheme when the planning and erection of buildings is necessary, the first thing to be done by the projectors is to secure the professioual services of an architect—one in whom all confidence is reposed—to advise with and prepare the plans, etc., of a building which shall fill all the requirements of the special scheme, not only as to arrangement of plan, but also as to appropriateness and beauty of design, and which shall not fall short, but surpass, if possible, other buildings of a similar character. This is a recognized business procedure and the only proper mode of carrying out the scheme in hand. Now to find this architect and adviser, one must first look for an educated man in his profession, and one who has had experience in all matters pertaining thereto, and is able to study and solve the problem given him in a careful and business-like manner in all its details; and the architect, to do this, must have years of study and long experience, and a certain aptness for his profession, coupled with decision of character and a gentlemauly bearing, which are all necessary for success.

These qualifications it would be unreasonable to expect in a builder who has neither had the time nor means of study, and whose early manhood has been spent in the details of probably but one branch of the carpenter's trade. These men have, in some iustances, familiarized themselves with a few plans and specifications prepared by architects, and have finally essayed the practice of architecture; and in most cases the community loses a good builder and gains a person too large in his own estimation for the honorable trade, and yet greatly too small for the profession he calls "Arch*e*tecturing."

The trade of a builder is a most honorable one, and carries with it great responsibilities; and its emoluments are always satisfactory and often large; and there is always room in any community for a good builder while there should be no room for a pretender.

It would be impossible in this paper to enter iuto a criticism of the drawings furnished by builders and to follow them up and examine the building erected from them; but suffice it to say, they are in almost every case crude, raw and undigested, and even to the uneducated eye there is something that stamps them as builders' drawings, and the house erected from them is neither in desigu a thing of beauty nor in plan a joy forever.

The question is how shall we seek to remedy this evil. The fault lay not at the door of the builder; for he, in making these so-called architectural designs, is but supplying a demand of the public, the *masses* who are too often ignorant and careless in all matters of architecture, and who, thinkiug to save the professional fee, will expend often twice the amount of this fee in patching up mistakes in faulty plans and specifications, and inflict on the community a Dolly Varden monstrosity.

We can only hope for an improvement by the gradual education of the public to a higher standard in architecture. That this standard is improving, there is little doubt; and here in the South-land, which we all love so well, and in whose development we are peculiarly interested, there is a growing demand for better thiugs, and the public is discriminating between good and bad architecture. This is the age of travel and observation, and much is learned by comparison. Art is now diffusiug itself into everything, and this is seen in the simplest forms of household decoration; and the child of today is surrounded and educated by artistic objects that were not thought of in our boyhood days.

And so it behooves us now, one and all, to strive for this end; and with nuceasing study and the careful preparation of every detail of design, both in small as in large buildings, to improve the architecture of the South, and to place it on a level with that of any other part of this land. Nature has been most bountiful and the resources of our country are unlimited; and we desire the traveler in the futnre to pause and admire and study our architecture as well as our history.

At this point Mr. W. S. Smith, of Birmingham, offered a resolution looking to the strengthening of this Chapter by further obtaining a charter from the State of Alabama, which elicited considerable discussion and was finally referred to a committee consisting of L. F. Goodrich, D. B. Woodruff and F. L. Rousseau, who reported that in their opinion it is inexpedient at that time to take any action, and recommended that the resolution be laid upon the table. Upon motion of Mr. Lind the report of the committee was adopted.

At this point the secretary stated that there had been a successful attempt made by some members of the Institute to have the dictionaries make a clear distinction between the "supervision" of work by architects and the "superintendence" of work, and that it was understood that such distinction would be in future editions of the dictionaries, and that it was high time that the profession generally were dropping the expression, "superintendence," as applied to their "supervision" of work; as superintendence could be furnished only by persons who remained all the while on the building, and this was clearly the duty of the clerk of the works; and the expression "superintendence" should not be used in connection with architectural service.

Mr. Helmich: In view of the fact that the evening session will be occupied by the members of the legislature, and the amount of work that is yet to be accomplished, it strikes me that we should go into the election of officers at this morning session instead of afternoon, as formerly decided upon, and since Mr. Burke has waived his objection to proceeding before hearing the

report of the Committee on the Treasurer's Accounts, I move that we hear the report of the Nominating Committees now.

The motion was carried.

Mr. D. A. Helmich, chairman of one of the committees, submitted the following recommendation: L. F. Goodrich for president, W. P. Tinsley for vice-president, P. E. Dennis, secretary and treasurer. Directors—D. B. Woodruff, T. H. Morgan, Tom Wood, T. H. Maddox and C. C. Burke.

Mr. Charles Wheelock, chairman of the other committee, made the following recommendation: L. F. Goodrich for president, E. G. Lind for vice-president, and W. P. Tinsley for secretary and treasurer. Directors—C. C. Burke, T. H. Maddox, T. H. Morgan, D. B. Woodruff and Tom Wood. The result of the ballot was as follows: L. F. Goodrich, president; E. G. Lind, vice-president; W. P. Tinsley, secretary and treasurer. Board of Directors—C. C. Burke, T. H. Maddox, T. H. Morgan, D. B. Woodruff and Tom Wood.

SECOND DAY — AFTERNOON SESSION.

On motion of Mr. Goodrich the report of the Auditing Committee was received, and the committee discharged.

TREASURER'S REPORT.

Amount collected for dues	$118.00
Amount paid out for expenses of all kinds	64.96
Leaving balance in treasury	$ 53.04
Amount of outstanding claims of all kinds and not paid	60.30

The report of the treasurer was adopted.

Mr. Wood: I desire to read a letter recently received from a Birmingham firm, which was evidently intended as a bribe, as an inducement to use the wares and manufactures of this particular firm, which is certainly not legitimate; and all parties so inclined to consider architects as being commodities that are on the market for purchase, should be informed that this is a mistake, and that a tender in this direction will ever be considered an insult by the architect receiving it.

Upon motion of Mr. Wood, which was unanimously adopted, it was ordered that this letter be published in the *Southern Architect*.

On motion of Mr. Wheelock the aforesaid letter was referred to a committee consisting of Messrs. C. Wheelock, Helmich and T. H. Maddox, architects of Birmingham, to investigate these parties and their methods, and to report the same to the secretary.

The President: This being the time fixed for the conference with members of the Alabama legislature, two of whom are present; we will now hear from them.

The Hon. Mr. O'Brian was introduced to the convention, and made a pointed speech regarding the laws to be presented to the legislatures of each of the southern states, and said that he was heartily in sympathy with us, as he knew of the many difficulties that we have to contend with as a profession, and that he would gladly introduce any bill into the legislature of Alabama that we would formulate, and do all in his power to have it become a law.

At the conclusion of Mr. O'Brian's speech his colleague was introduced to the convention and spoke in high praise of the calling of our profession and said that he was confident that the proper laws would be enacted to regulate the practice of our profession, which in his opinion would prevent many accidents happening from insecure construction, and the many ills arising from improper ventilation, lighting, heating, etc., and that he would assure us that he would use every endeavor to have proper laws, bearing upon this subject, passed by the state legislature.

At this point Mr. Rousseau made a speech looking to the welfare of the profession in the southern states, which was pertinent, pointed and well delivered, and was well received by the members present.

Augusta, Georgia, was selected as the place for holding the next annual convention.

At this point, Mr. Bruce, the retiring president, said that he would resign the office of president to his worthy successor, and Mr. Goodrich was escorted to the chair.

A paper on the "Problem of Architectural Education," by Mr. Nixon, of Atlanta, was read by the secretary.

Mr. Woodruff: In order that the work of the secretary may be curtailed as far as possible, I wish to offer the following resolution:

Resolved, That all applications for membership in this Chapter in future must be accompanied by the admission fee of $5 before any action can be taken thereon by the Board of Directors, except in cases of Fellows of the American Institute of Architects, or of any of its Chapters, or of State Associations, who shall be admitted without the payment of the membership fee.

The Secretary: I have a letter from the president of the American Institute of Architects, and also one from the president of the Ontario (Canada) Association of Architects, which I will now read.

NEW YORK, January 9, 1893.

A. C. Bruce, Esq., President Southern Chapter American Institute of Architects:

DEAR SIR,—The very attractive programme of your second annual convention was duly received. The proceedings will evidently be both interesting and instructive.

I am very much obliged to your Chapter for its kind invitation to be present, but a Directors' meeting of the Institute in Washington tomorrow evening, and a hearing on the following day before the Senate Committee on Public Buildings and Grounds, with reference to obtaining plans for government work by limited competition, will prevent my accepting it. With best wishes for a successful meeting, I remain, yours very truly,

EDW. H. KENDALL, President A. I. A.

27 NORTH STREET, TORONTO, December 30, 1892.

DEAR SIR,—I regret that I am unable to accept the invitation of the Southern Chapter of the American Institute of Architects, to be present at its second annual convention, as I have just returned after an absence of two months, and find that I have a large amount of work to do to get my office in proper shape.

I also regret that, owing to the above reason, I am unable to prepare a paper to be read at the convention.

On behalf of the Ontario Association of Architects, I wish your Chapter every success in its efforts to forward the interests of our profession. I am, sir, yours very sincerely, S. G. CURRY, President O. A. A.

Mr. Helmich: In order that the necessary bills may be properly framed and put before the various legislatures of the southern states, at as early a date as possible, I move that the president of this Chapter, at his earliest convenience, appoint three members in each state where this Chapter is represented, and that they coöperate with each other in formulating such bill or bills as will be for the welfare of our profession, and that these individual committees shall press upon their respective legislatures the importance of passing such wholesome and safe laws for the control of the practice of architects as is deemed necessary for the protection and welfare of the public.

The motion was unanimously carried.

The President: I appoint Messrs. Helmich, C. Wheelock and Smith the committee for the State of Alabama.

The Secretary: I should have stated in the report of the Board of Directors, that at their meeting in Atlanta, September 1, 1892, the resignation of W. W. Goodrich, Atlanta, Georgia, of membership in this Chapter, was accepted.

On motion of Mr. Lind the meeting adjourned.

THIRD DAY — NIGHT SESSION.

Meeting opened according to adjournment.

On motion of Mr. Burke the secretary was voted $100 as a recognition of his services, for the ensuing year.

The secretary returned thanks for the kindness shown him during the past year, and for the coöperation of the various officers and members, and pledged his best efforts for the control of the office for the ensuing year.

The President: Gentlemen, I wish to speak in praise of the untiring efforts put forward by our secretary during the past year. I know that his duties were arduous, and I also know that he performed them nobly, and I think that we cannot hold the services of our secretary in too high esteem.

Upon request Mr. Lind illustrated his treatise on "The Relation of Color to Music."

Mr. Bruce, the former President: In retiring let me return thanks for the kindness and courtesy shown me during the past year, and I hope that the Chapter in the coming years will be abundantly successful in the objects it has in view, and I desire, also, to return thanks to the Birmingham architects for the kind attention shown this convention.

Speeches appropriate to the occasion were also made by Mr. Goodrich, the president; Mr. Burke, Mr. Lind, Mr. Rousseau, Mr. Wood, Mr. Woodruff, Mr. Helmich and Mr. Wheelock.

Upon motion of Mr. Wheelock the convention adjourned.

NOTES FROM OUR FRENCH EXCHANGES.*

TROCADERO CASTS.

IT is announced that numerous molds of the collection of the Trocadero are now ready, and will be sent at once to Chicago for the World's Fair. As a curiosity should also be sent a copy of the idiotic regulation which will not permit anyone here to buy a cast unless it be a complete series. This, for instance, prevents anyone from obtaining a detail of the entrance of Notre Dame without becoming owner of the entire porch, which is a trifle large for the ordinary Parisian parlor!!

COMPETITION FOR A BRIDGE AT ST. PETERSBURG.

It is interesting to notice that in even so comparatively an inartistic creation as a bridge, the authorities of the old world are inclined to move slowly, and to allow competitors sufficient time to place their ideas in shape, all of which is illustrated by the following extracts from a preliminary programme issued in October last, for a bridge over the Neva:

"The detailed programme and all the necessary data will be issued on April 28 (O. S.), 1893, to competitors who make application at the city hall, St. Petersburg.

"The drawings must be all delivered at the city hall October 2, 1893.

"Specifications must be in Russian or French. Cost not to exceed six millions of roubles."

Imagine an American board giving six months' general advance notice of a proposed competition and then six months to prepare the drawings!!

THE OBSERVATORY AT MONT BLANC.

Thanks to the efforts of the eminent astronomer, Janssens, the construction of the observatory on the summit of Mont Blanc, at an altitude of 15,000 feet above sea level, has at length been undertaken.

At first it was intended to pierce the snow and ice coating which at all seasons covers the summit, where the temperature varies from 10 degrees above zero (Fahrenheit) to 30 degrees below. However, after having dug holes twenty-five feet deep in the ice without striking rock, the idea was abandoned, and the building is to be built upon ice foundations.

The structure, according to *La Semaine des Constructeurs*, is about fifteen by twenty-five feet, and will be built of wood, first subjected to a coating of fireproof paint. There are two stories in

*Translated and arranged for THE INLAND ARCHITECT by W. A. Otis.

height, each one consisting of a single room. The upper floor, which is on a level with the average snowfall, will be used exclusively for the observatory service, while the lower floor, with which it is connected with a ladder, will be for the use of travelers. The ventilation of the lower story will be accomplished by ventilation pipes, the same as used in holds of steamers.

The flat roof has a balustrade around it, carries the cupola and a wooden cage, where the meteorological instruments will be placed. The building is to be upon ten powerful jackscrews, which will enable the occupant to reëstablish a level in the building should by any chance a movement take place in the bed of ice upon which it rests. This system has already been used, as is well known, in the Eiffel tower, to reëstablish perfect perpendicular should the construction by any strain be thrown out of plumb. That part of the observatory above the snow level is to have the form of a truncated pyramid, thus offering the least possible surface to the wind. Dormer windows with double sashes admit light and allow of the transmission of signals. Every piece of this structure has been made at Paris, under the supervision of M. Janssens, and sent to Chamonix, 3,500 feet above sea level, by railroad. Thence they were transmitted by mule to the workmen's cabin, constructed at a point known as "The Needle," 4,000 feet higher, and now are stored actually about three thousand feet still higher, at a point known as Red Rocks, and next spring will be carried to their destination, nearly a thousand feet above, there to be slowly and painfully put together.

THE DESTRUCTION OF OLD BUILDINGS IN THE PROVINCES.

Vandalism is a severe word to employ in speaking of the necessary destruction of a mass of old superannuated buildings which are to be replaced by modern constructions as comfortable as the old ones were useless. Possibly the comfort of these old "barns" is not a question to discuss here, but at the same time one cannot entirely forget certain suites of large and splendidly lighted rooms in the old Rue Saint Jacques, where the lawyers of other days had their offices. Here one went up stairs which were lighted by the blessed sun, and besides, there were hand-rails of hand-wrought iron, or balusters of handsomely carved wood, so that there would seem to be fully as much comfort as in the little coops, nine feet high, which are honored by the name of offices and reached by an elevator where gas is burned at midday.

To destroy, demolish, tear down everything and rebuild again, always be building, for that is the fashion! But do have mercy, and once in a great while kindly spare to us at least a little sample of the architecture of our fathers. Now that the mania for cutting through everything has destroyed nearly all interesting Paris, let the country follow the example of the city by all means!

At the north, the south, the east and the west, let us have all of our towns, now full of character, pulled down and made as uniformly uninteresting as possible. According to a pamphlet recently published, it is the clergy who are tearing down their own venerated sanctuaries, and the town councils decreeing the destruction of true historical monuments that are the glory of their villages and cities.

These old churches, where our fathers had placed all their faith and all their art, are disappearing one by one. Neither barbarians nor revolutions accomplished as much wanton ruin, both together, as the last twenty-five years, and the vandals, alas, are exactly where they should be least expected. The plague of new churches is sweeping through the land. A neighboring commune has a new chapel, and so we must have one too, and there is built something big and large and high; but beautiful? that is another thing. They are great, commonplace, vulgar barns, and nothing more. These new iconoclasts, who are our spiritual guides, have destroyed in ten years more images remarkable for their naïvete and antiquity than all the Huguenots and revolutionists put together.

The simple peasants of Brittany have such respect for their rectors that they follow them even into that which is the destruction of art—so that here there seems little help unless government interferes and diocesan architects protect.

EXCAVATIONS AT DELPHI.

These excavations are now about to actually commence; all the condemnation suits have been arranged, and all plans and estimates have been signed. There were, however, serious difficulties to overcome, since there were over a thousand small owners whose land had to be appraised and indemnified before a single stroke of the pick could be ordered.

The amount paid for all of this amounts to over $80,000, while there remains about $70,000 on hand to undertake the actual explorations and excavations.

COMPETITION AT LORIENT.

L'Architecture is greatly elated over the embarrassing predicament that the authorities of Lorient are finding themselves in as the result of a competition opened there for some municipal buildings. According to the programme only one architect was to be upon the jury, and he was to be appointed by the mayor. All the architectural societies protested in vain. But now that it comes to the selection of this one solitary architect, there is trouble, as everyone thus far asked has refused to take the position, and without him the decision would be illegal. It now appears as if it would be necessary to commence entirely anew, and either entirely leave the architect off of the jury, or else appoint enough so they shall have a majority. In any case the authorities are greatly disgusted.

AGREEMENT BETWEEN CHICAGO CARPENTERS.

THE main points in an agreement between the Carpenters' and Builders' Association, of Chicago, and the United Carpenters' Council, which has just been entered into, to remain in force for two years, is as follows:

That the Joint Committee on Arbitration shall hear all complaints made by members of one association against members of the other, or of the association against each other, and finally decide all questions so submitted; that work shall go on continuously during arbitration unless stopped by the joint order of the presidents of the associations; that, in case of a sympathetic strike of other trades, where it will be necessary to protect union principles, the presidents of the associations shall order all carpenter work to cease until the matter shall be adjusted, and such strike shall not be considered as hostile to the Carpenters' and Builders' Association; that, should such a strike take place, the union carpenters shall protect their employers' property from damage; that the Joint Committee on Arbitration shall hold office for two years from April 3, 1893; that in January, 1895, each association shall elect a standing committee of five to serve for the next two years, and establish a minimum rate of wages; that the working day shall be eight hours; that the pay shall be by the hour; that the minimum rate of wages shall be 40 cents an hour from April 3, 1893, to April 3, 1895; that overtime shall not be allowed under any pretense except where human life is in jeopardy or property in danger of destruction; that overtime shall be rated at time and half-time, and Sunday work as double time; that all carpenters shall be paid at least once in two weeks, and when discharged shall be paid on the day of discharge or on demand; that the apprentice system shall be governed by the state laws, except that no apprentice shall be taken who is under twenty-one years old, all apprentices to join the union; that foremen may not be members of the union and will in all cases represent their employers; that no reduction shall be made in the rate of wages without due notice; that no piecework will be permitted; that none but union carpenters shall be employed; that no union carpenter shall work for anyone not a member of the Carpenters' and Builders' Association, or a signer of the agreement, the city of Chicago and like corporations excepted; that violations of the agreement shall be punishable by fine to be fixed by the Arbitration Committee.

The Committee of Arbitration of the Carpenters' and Builders' Association is François Blair, chairman, and Messrs. Beahl, Campbell, Edmunds and Neagle.

ASSOCIATION NOTES.

CHICAGO ARCHITECTURAL SKETCH CLUB.

In reviewing the catalogue of architectural drawings lately compiled and published by the members of the Chicago Architectural Sketch Club, it is interesting to note that the Club's membership is made up of the draftsmen that are by their artistic ability and enthusiasm bringing into our structures those results that indicate that the change from the mechanical to the artistic in design for Chicago at least has already become a well-established reality.

The members of this Club are all young men of great promise and in not a few cases of acknowledged ability, and their influence on the architecture of the future cannot fail to be a wholesome one. The recent publication, which is really a book of sketches, all executed by members, will show in a slight degree their abilities, although it is to be regretted that a great many of the most prominent members are not represented, while in other cases the representation cannot be considered just to the men whose names appear. Considered as a whole, however, this book is a most artistic publication, reflecting great credit on its projectors.

Copies of the book can be obtained of Mr. A. R. Durkee, room 1640 Unity Building, Chicago, for the price of $1.

The Club wish it announced that the gold medal design in the Robert Clark Testimonial Competition of last year, which was credited to Mr. Axel Sanblom in the book of sketches mentioned above, should also bear the name of Mr. John Johnson, it being the joint production of these two gentlemen.

The subject for the next Clark competition will be announced soon and promises to present a programme acceptable to every ambitious young designer in the country.

On Monday evening, January 23, the members and their friends were agreeably and instructively entertained by Mr. A. L. Schlesinger, who read a paper, lavishly illustrated with lantern-slides, views on the "Castles of King Louis II, of Bavaria." The paper, which described the eccentric king himself as well as his castles, commencing with a view of his birthplace and closing with a description of his tragic death and a view of the place where he was drowned, kept the audience entranced until the close. On February 6 the members entertained each other by one of those characteristic evenings which have become a feature of the Club, where good fellowship prevails and where the members mingle among each other with that true spirit of fraternal intercourse which is the first binding tie that holds such societies together.

A varied programme, containing a theatrical performance by some of the members, some really excellent musical numbers and some individual exhibitions upon the stage, was discoursed, and the meeting was handed down in the minutes of the Association as another unqualified success.

On the evening of February 20 the members of the Club listened to an informal talk upon European sketching by Harry Bacon, which was full of experiences and information, making an attractive picture of "the draftsman abroad."

THE SKETCH CLUB OF NEW YORK.

The meeting of the Sketch Club of New York, held in the club rooms in that city, Saturday, February 4, was largely attended and of unusual interest. It was the annual meeting, the officers for the ensuing year being elected and reports of retiring officers received. Twenty-four drawings were submitted for the Miller prize for exterior of a country house from plans furnished, and six drawings for the Ackerman prize for pen-and-ink rendering of a carved panel. A criticism of the last month's competition — a hillside

tomb—was received in writing from Mr. Thomas Hastings. N. Hauseman received first mention and Edgar A. Josselyn, second mention. Officers elected for the ensuing year were as follows: Frederich R. Hirst, president; Charles Ackerman, vice-president; Edgar A. Josselyn, recording secretary; Frank H. Quimby, corresponding secretary; Harry L. Parkhurst, treasurer; Edgar B. Bross, chairman of Current Work Committee; Danford N. B. Sturgis, chairman of Entertainment Committee; J. Oliver Cummings, chairman of House Committee. After the election the club discussed the probable future alliance with the architectural league.

OUR ILLUSTRATIONS.

Buffalo sketches by J. F. Jackson.

Flats for Geo. M. Porter, Buffalo, N. Y.; E. A. Kent, architect.

Chicago Stock Exchange Building; Adler & Sullivan, architects.

Walker Museum, University of Chicago; Henry Ives Cobb, architect.

The Kenwood Apartment Building, Chicago; Charles S. Frost, architect.

South Side Turner Hall, Chicago; Flanders and Zimmerman, architects.

Residence for Eugene H. Fishburn, Chicago; Frederick W. Perkins, architect.

Market Hall and Market Square Dwellings, Pullman, Illinois; S. S. Beman, architect, Chicago.

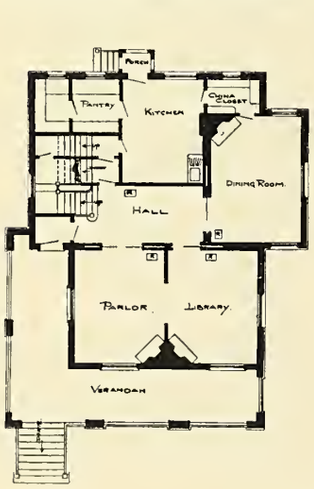
Old Houses, opposite Kenilworth Castle, England. Sketched by Frank A. Hays, Philadelphia.

Denver Architectural Sketch Club Competition—Suburban R. R. Station. First place, Harry Thomas, Jr.; second place, T. A. Green, Jr.; third place, W. Pell Pulis.

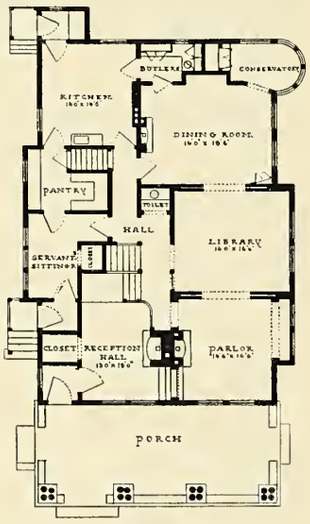
A Fountain to Commemorate the Discovery of America—New York Architectural League Competition of 1892. Design awarded gold medal, submitted by Alfred F. Evans, Chicago. Design awarded silver medal, submitted by Hobart A. Walker, Oak Park, Illinois.

Photogravure Plate. Residence for J. L. Cochran, Edgewater, Illinois; J. L. Silsbee, architect, Chicago. Plan A.

Residence of W. J. Fabian, Evanston, Illinois; Raeder, Coffin & Crocker, architects, Chicago. Plan B.



PLAN A.



PLAN B.

PHOTOGRAVURE PLATES.

(*Issued only to subscribers for the Photogravure edition.*)

Old Independence Hall, Philadelphia.

Addition to residence of J. E. Scripp, Detroit, Michigan, Mason & Rice, architects.

Fire Department Headquarters, Detroit, Michigan, Donaldson & Meier, architects.

Residences for James C. Kuhn, Detroit, Michigan, Rogers & MacFarlane, architects.

Drawing room, residence of G. W. Lee, Detroit, Michigan, Mason & Rice, architects.

Tower and upper stories of the Schiller Theater Building, Chicago, Adler & Sullivan, architects.

The United States Mail Chute and Special Mail Box in Administration Building, World's Columbian Exposition, Chicago, The Cutler Manufacturing Company, sole makers, Rochester, New York. The box is of fine marble with bronze trimmings. There are four of them in the building.

First Congregational Church, Detroit, Michigan, John Lyman Faxon, architect, Boston, Massachusetts.

The church is of the Byzantine style of design. It is built of a rough-dressed, warm, but not very dark, red stone of irregular sizes laid in broken courses. The interior of the church, with its domed chancel and choir stalls of oak, its transepts and nave, its groups of chancel arches, its massive transept arches, its level floor, and freedom from galleries and pillars and its stately wealth of symbolism and color in its decorations, is essentially the interior of a house of worship, impressive in its simplicity of form and devotional in the feeling it inspires. The basement of the church contains the electric motor which furnishes the power for the grand organ and the fans for the distribution of hot or cold air as may be needed for heating and ventilation. The basement of the church house contains a large dining hall corresponding in location and size to the audience room above. Off from this room—used also as a drill room by the Sunday school cadets—are a kitchen, storerooms, china closets, lavatory and coatroom, which occupy the space corresponding to the areas of the reading room and parlors above. At the north end of the basement, beneath and corresponding in size to the total area of the two classrooms and the library on the main floor, are the engine room, fuel room, and closets. As the chapel or lecture room has free space to the roof, the second story exists only at either end of the building. At the south end and above the reading room and classroom are respectively the pastor's study and the general workroom, which correspond to the sizes of the rooms below them. The entire area of the library and the two classrooms at the north end is, at the second story, devoted to a single large room which is used for the primary department of the Sunday school.

Both buildings are warmed by the use of hot air with automatic appliances for regulating the heat, and assisting their general ventilation; they are provided throughout with fixtures for both gas and electric lighting, the electric lighting being used chiefly, the presence of gas fixtures being simply an emergency provision.

It is in the decoration of the church interior that the chief departure—so far as churches in this country may illustrate—has been made. This decoration builds its harmonic details from a keynote of blue, using therefor gold, white, yellow, black, bronze, green, brown and red. The wainscoting is high and of quartered oak, antique in style. This is finished by a continuous band having symbolic tiles in low relief and overlaid with gold, but subdued in tone by a double coat of lacquer. The most notable features of the entire scheme of decoration are four heroic-sized ideal portraits of Matthew, Mark, Luke and John, strong in pose, drawing and color, and shown against circular backgrounds of gold, nine feet in diameter, which are surrounded by frames of lozengy design so treated as to color that each frame is typical of the bow of promise. These portraits (painted by Miss Lyle Durgin, of Boston), occupy respectively the four chief compartments of the main ceiling. The lower portions (eight in number) of the groined vault are occupied by graceful life-sized figures of angels typifying the eight cardinal virtues of Faith, Hope, Charity, Mercy, Constancy, Fortitude, Justice and Humility. Finally the several triangular compartments of the vaulted ceiling are at the angles accentuated by the presence of well-painted cherubs. Thus the entire ceiling is brought together as a whole consistently as to design and color, in perfect harmony with the walls, windows and church furniture.

The church is provided with quartered-oak pews of antique finish, handsome in design and furnishing a total of 956 seats. The chapel proper is provided with chairs (movable) for 350 sittings, although by opening doors to the reading room and various classrooms and side balconies, an audience of 650 persons can be comfortably seated within view and easy hearing of the speaker's platform. The total cost of the lot and buildings complete was $164,000, all of which was paid or pledged before the dedication, December 13, 1891. The decorations are after the architect's designs in pattern and color.

MOSAICS.

Mr. F. Stewart Smith is general manager of the furnishing and decorating department of A. H. Andrews & Co., and Martin B. Hayken is the western representative.

A lady, with an art school education, who has had some experience as accountant, and is a stenographer and typewriter, will give her services in these lines for an opportunity to learn drafting, and wishes to communicate with an architect requiring such services through The Inland Architect.

Hugh M. G. Garden and Edmund L. Ellis, of Chicago, have established an office for the rendering of architectural perspectives at Room 710, Real Estate Board Building. These draftsmen are well known by their work published in architectural journals. Mr. Garden is secretary of the Chicago Architectural Sketch Club.

L. F. Crosby, who has been known as an interior designer in Chicago for the past twelve years, has general charge of the manufacturing department of the firm of J. A. Colby & Sons. Those who knew Mr. Crosby a decade ago will remember how few were the good interior designers besides him in the West, and old friends as well as new will place greater reliance than ever upon the ability of this firm to furnish the artistic interiors now demanded by the people of their architects.

Speaking of calendars, that issued by the passenger departments of the C. H. & D. of Cincinnati and the "Monon Route" of Chicago, is by far the most artistic that has appeared to count the days of this Columbian quadri-centennial, and while its object is to direct the public in "the way it should go" when traveling to the Fair, it is also an art production, worthy of a place in any library. If the taste which selected it and the enterprise which issues it suggests that the same qualities govern this admirable system of railroads in its care for the traveling public, such a conclusion is but natural, and when made this Columbian souvenir will have accomplished its mission but will not cease to be an attractive art production—until the "C. H. & D." and "Monon Route" send something still more artistic to take its place.

BUILDING OUTLOOK.

OFFICE OF THE INLAND ARCHITECT,
CHICAGO, February 15, 1893.

"Are we to have a booming or a moderate year?" is an inquiry very commonly made. If a booming year, buyers and users of material and supplies everywhere will purchase very soon and largely, to be protected against advancing prices. If only a moderate year, then buyers will let things glide along, trusting to the enormous production and resulting competition to protect them against higher prices. It is still too early to speak definitely of probabilities. There is no doubt whatever, that there will be a general expansion of demand, but within known limits. It is not so clear that there will be a sudden and unusual demand for which the productive industries are not altogether prepared. Commercial authorities speak of a slight improvement in prices all around, and also note the reassuring fact that production is being kept down to actual demands. The shops and factories are running as a rule as full as at any time for a year, considering the season. The iron and steel makers are not doing a large business as yet. Railroad building is not opening up as fast as hoped. House building, on the contrary, or preparations for it, are quite encouraging and building material is low in price. The saw and planing mill industry has gained and the season prospects are bright. Lath and shingles will be sold as soon this year as last. New mills have been erected. Brick production will be considerably increased, including the supply of "fancy" or special makes. Builders feel much encouraged to go on building, and those who have been supplying most of the funds feel that while returns are not very large there are no more invitiug fields for investment. The increase of cable and electric roads and the expansion of rapid transit facilities will exert a favorable influence on building enterprise. While the larger cities will continue to grow rapidly, the smaller cities and towns will probably expand in greater degree because of the increasing advantages for manufacturing and for distribution of products, as well as the greater attractiveness for residence purposes. Schemes for establishing cheap electric lines for passenger traffic and freight handling are beginning to attract the attention of capitalists and promoters in lieu of railroads. The year 1893 is certainly very full of promise for great and enduring achievements.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than $5,000 are not published.

Chicago, Ill.—Architect M. E. Bell: For C. L. Chave, on Cottage Grove avenue between Fiftieth and Fifty-first streets, a three-story apartment house, 100 by 85 feet in size; to be of stone, pressed brick and galvanized iron front; will put in steam heating, electric light, etc.; the cost will be about $60,000. For Rev. William Goodfellow, at Sixtieth street and Monroe avenue, a two-story basement and attic resideuce, 26 by 58 feet in size; to be of frame with stone foundation; have hot-water combination heater, electric light and all sanitary improvements, hardwood finish for the first floor, yellow pine second floor, and the attic in white pine. For Hon. D. W. Smith, at Springfield, Illinois, a three-story apartment building, size 50 by 80 feet; to be of stone front with stone bays; have hardwood finish, steam heating, electric light, etc.; cost $20,000.

Architects Dixon & Brookes: For M. Uebele, at Fifty-fifth street and Ridgewood Court, a two-story store and flat building, 76 by 90 feet in size; to be of pressed brick and stone on two sides; have hardwood mantels, all sanitary improvements, and cost $25,000. For Mrs. Boomer, on Wright and Sixty-second streets, a block of three stores, of pressed brick and stone front. Also letting contracts for the Hotel Wabash, to be erected on Wabash avenue and Eda street; it will be eight stories, 131 by 120 feet in size; of pressed brick and terra cotta; have steam heating, electric light, elevators, marble and mosaic work, etc.

Architect Theodor Lewandowski: For E. S. Schenk, on Morgan street near Ohio, a three-story and basement apartment house, 40 by 56 feet in size; to be of pressed brick and stone front, with galvanized iron bays and cornice; to have steam heating, sanitary plumbing, and cost about $15,000. For same owner, in Lake View, a two-story-residence, 26 by 54 feet; to be of frame with stone basement; all sanitary improvements, hot-water heating, laundry tubs, etc. For R. Kwiatkowski, on Ashland avenue between Seventeenth and eighteenth streets, a four-story and basement store and flat building, 24 by 80 feet in size; to be of stone front, have pine finish and sanitary improvements.

Architect George Grussing: For John O'Connell, at 19 Arthington Place, a two-story flat building, 22 by 50 feet; to be of pressed brick and stone front, etc. For George McLester, on Homan avenue near Sixteenth street, four two-story flat buildings, 22 by 46 feet each; to be of stone front, have all sanitary improvements, and cost about $20,000.

Architect A. G. Ferree: For M. B. Edwards, on Lafayette avenue between Seventy-first and Seventy-second streets, a two-story double flat building, 42 by 50 feet in size; to be of stone front with copper bays; have sanitary plumbing, hardwood finish, etc. For McJ. Flaws, on Sixty-second and Loomis streets, a two-story frame flat building. For S. E. Orr and Andrew Clouse, on Fiftieth street and Hoyne avenue, two two-story frame houses; to have stone basements, sanitary plumbing, and cost $7,000.

Architects Park & Pursell: For L. A. Halwin, on Walnut street, near Sacramento avenue, a three-story flat building; size 25 by 65 feet; to be of stone front and cost $7,000.

Architects Hallstrom & Peterson: For Julian Brothers, on Hoffman avenue, near Grand boulevard, a three-story apartment house; size 75 by 50 feet; to be of pressed brick and stone front, with galvanized iron bays, sanitary plumbing, wood mantels; cost $20,000. For F. Segersten, on Fletcher street, near Clark street, a two-story livery stable; size 50 by 110 feet; to be of pressed brick and stone front.

Architects Church & Jobson: For Burley & Co., remodeling two stores at 145 and 147 State street; they will be both made into one and have steam heating, electric light, elevators, marble work, etc.; the cost beiug about $80,000. For James Wilson, at Sixty-fourth street and Oglesby avenue, a three-story flat buildiug; size 25 by 66 feet; to be of stone front, have hardwood finish, steam heating, all modern sanitary improvements; cost $10,000. For John Quinn, at Sixty-fifth street and Oglesby avenue, a three-story flat building; to be of light-colored pressed brick front with stone trimmings, have hardwood finish, steam heat, etc.

Architects F. L. Fry & Co.: For E. J. Dougherty, on Seventy-second street and Madison avenue, a double three-story frame flat building, to have a stone basement, hardwood finish, all the sanitary conveniences, heating apparatus, etc.; cost about $12,000. Also making plans for a three-story apartment house, 50 by 82 feet in size, to be erected on Grace avenue near Sixty-second street; to be of stone front, have all modern improvements, steam heating, electric light, etc.; the cost to be about $30,000.

Architect Fernand Parmentier: For Duncan E. Bennett, at Downer's Grove, six frame houses; to have modern conveniences, etc.

Architect Francis J. Norton has completed plans for a handsome hotel to be erected at Sixty-third street and Hope avenue, for Mr. Swinington; it will have a frontage of 100 feet on Hope avenue, and 75 feet on Sixty-third street; the exterior will be built of Denver red granite with two copper towers and two massive Romanesque arches; the interior of the rotunda will be finished with Mexican marble; the building will have steam heat and all the latest sanitary electric and modern improvements; cost $75,000. Mr. Norton has delivered designs and plans to Messrs. Fadner Brothers for tweuty handsome residences to be erected at Fair View Heights; they will be built of brick and frame and cost a total sum of $50,000; the same architect is taking estimates on a fine residence to be erected at Park Ridge for Mr. A. Grey; it will be 40 by 50 feet and be built of stone and wood and oil finish hardwood and all the modern improvements; cost $5,000.

Architect W. R. Clayton: For William Gilman, at 5523 Sherman street, a two-story and basement store and flat building; to have a front of pressed brick and stone, hardwood interior finish, wood mantels, gas fixtures, electric light; cost $10,000. For William F. Peterson, at Hyde Park, a two-story residence; size 23 by 50 feet; to be of stone front, have interior finished in hardwood, will put in hot-water heatiug, electric light, gas fixtures, ranges and fireplaces, wood mantels; cost $8,000. For John Haskins, on Wright street, south of Sixty-third street, a three-story flat building; size 28 by 75 feet; to have a stone front, hardwood interior, heating apparatus, electric light, gas fixtures, fire-places and ranges. For M. Bullard, on ———— street, near Lincoln Park, a four-story flat building; size 25 by 80 feet; to cost $15,000; it will have a front of pressed brick with Bedford stone trimmings, pine finish, all sanitary improvements, electric light, gas ranges, etc.

Architect H. B. Wheelock: For R. P. Hollett, two two-story basement and attic residences, to be erected at Evanston. They will be of frame construction with brick basements, have furnaces, electric light, wood mantels, the best of modern conveniences, and cost $10,000.

Architects Crowen & Richards: For the Realty Improvement Company, of Detroit, Michigan, twenty-five two-story frame houses, to be erected at Chicago Heights. They will have stone basements, Georgia pine finish, bathrooms, closets, wood mantels, furnaces, etc.

Architect Ira C. Saxe: For A. G. Bald, on Ashland avenue near Leland, Ravenswood, a three-story flat building, 25 by 67 feet in size; to be of pressed brick and stone front, have electric light, all the sanitary improvements, laundry tubs, wood mantels, etc. For J. E. Kavanaugh, next door to the above, a two-story residence, 34 by 48 feet, to be of pressed brick and stone front, have electric light, laundry fixtures, furnace, etc.; cost about $6,000. For E. T. Head, at South Harvey, twenty two-story eight-room frame cottages, with brick basements, etc.

Architect Perley Hale: For F. R. Otis, at 247 to 251 Dearborn street, a thirteen-story office building, to front 50 feet on Dearborn street and 71 feet on Jackson street. It will be constructed of granite, pressed brick and terra cotta, will be of steel construction and thoroughly fireproof. The interior will be very handsomely finished in marble and mosaic, and have electric light, steam heating, elevators, etc.

Architects Snyder & Nothnagel: For T. J Prendengast, at 5915 State street, a five-story store and flat building, 25 by 87 feet in size; to be of tooled stone front, with copper bays, have steam heating, electric light, hardwood finish, mantels, etc.

Architects Brown & Lindquist made plans for four two-story flats to be erected on Maple avenue near Franklin street. It will have a frontage of 100 feet and be 61 feet in depth. The front will be of stone, the interior to be finished in hardwood and have gas fixtures, heating, sanitary improvements, and the cost will be about $30,000. For A. M. Brooks on Oakley avenue near Twelfth street, a three-story flat building, 25 by 70 feet in size; to be of stone front, with with copper bays, have sanitary plumbing, hardwood finish; cost $10,000.

Architects Fry & Cunningham: Preparing plans for a three-story flat building, 85 by 125 feet in size, to be erected on Sixty-fourth street. It will have two fronts of Jasper stone, with Anderson pressed brick and the same stone for trimmings and handsome entrance with polished columns. The interior will be finished in hardwoods and have steam heating, electric light, wood mantels, marble wainscoting, mosaic and tile vestibules, gas ranges and the best of sanitary and modern conveniences. They are also working on drawings for a four-story apartment house, 50 by 95 feet in size, to be erected on Drexel boulevard near Fifty-sixth street. The first story will be of Arcadian variegated brownstone and the rest of Milwaukee buff pressed brick and stone. The interior will have hardwood trimmings, wood mantels, steam heating, electric light and all improvements; cost about $30,000. For D. N. Simmons on Sixty-third street and Grace avenue, a three-story flat building 50 by 184 feet in size, to be of pressed brick and stone front, and cost about $20,000. For A. W. Husted, on Lincoln and Woodside avenues, a three-story flat building, to have two fronts of pressed brick and stone.

Architect Frederick Ahlschlager: Finishing drawing for the Chinese theater, to be erected on Sixth-fourth street near Stony Island avenue, for the Wah Yung Company. It will be constructed of pressed brick, stone, galvanized iron and china tiles. Will put in electric light, gas fixtures, etc. The building will be 84 by 96 feet in size, three stories high and contain stores, restaurant and theater with seating capacity of seven hundred.

Architects Fraenkel & Schmid: For Frank I. Bennett, on Stony Island avenne and Eightieth street, twenty two-story, basement and attic frame houses with brick basements, sanitary plumbing, mantels, etc.; cost $40,000. For F. K. Root, on Edgerton avenue and Sixty-first street, a block of three three-story and basement residences, to be of buff pressed brick and stone fronts, have electric lights and all improvements, and cost $22,000. For Edward Shepherd, on Seventy-fifth street, Windsor Park, a two-story store and flat building, 50 by 57 feet in size; to have sanitary plumbing, gas fixtures, etc. For M. Loftus, on Carlin avenue, Windsor Park, a two-story and basement flat building.

Architect Jules De Horvath: For A. Hanshaw, a two-story frame resideuce, stone basement, hot-water heating, etc. Also preparing drawings for a suburban hotel, 225 by 200 feet in size, to be a summer hotel of frame construction, have electric light and all the modern improvements, and cost about $150,000.

Architect George Garnsey: For Arthur E. Miller, at West Superior, Wisconsin, a four-story business block and theater, 125 by 120 feet in size; to have fronts, on two streets, of brownstone. All the latest improvements will be put in, and the cost will be about $200,000. The building will contain six stores in the first story and offices above. The theater will be 58 feet wide and 125 feet deep, and will have accommodation for 425 on the main floor, 274 in the balcony and 300 in the gallery.

Architects Marston & Hotchkins: Making drawings for revolving theater, to be erected on Fifty-fifth street and the lake, for the National Revolving Theater Company. It will be 165 feet in diameter, and have seating capacity for 1,400 persons per hour. Also for Frank J. Reed, at Sheridan Park, a two-story frame residence, 31 by 60 feet in size; first story to be of stone, interior to be hardwood trim and have furnace, electric light, etc.

Architect Louis Marteus: For J. C. Sherer, on Ellis avenue near Sixty-fifth street, a three-story apartment house, 40 by 75 feet; to be of stone for the first story and above this will be of pressed brick with terra cotta trimmings and copper bays. The interior will be finished in hardwoods and have steam heating, electric light, ranges, fire places, marble entrance, with mosaic floors, etc.; cost about $40,000.

Architect Gregory Vigeant: For himself, on the northeast corner of Madison avenue and Fifty-sixth street, a seven-story apartment house, 140 by 134 feet in size; it will have a handsome front of pressed brick and stone, the interior to be finished in various hardwoods, marble wainscoting, tile and mosaic floors; to have electric light, gas ranges, fire places, steam heating, elevators, etc. There will be ninety suites of apartments containing seven rooms each. The foundations are now being put in. It will cost about $250,000. It will be called the "University" apartment house, being only three or four blocks from the University buildings and about the same number from the World's Fair buildings.

Architects John Hendricks & Co.: Have just completed drawings for a five-story hotel, 50 by 130 feet in size, to be erected on the corner of Sixty-ninth street and Adams avenue. It will be of pressed brick and stone front with copper bays; have hardwood interior, electric light and sanitary conveniences. It will contain 200 rooms, and cost $50,000. For Mrs. Dawson, at Lawndale, a three-story flat building, 22 by 60 feet; to be of pressed brick and stone front; have sanitary plumbing, furnaces, etc.

Architect J. J. Egan has completed drawings for the St. Vincent De Paul church, to be erected corner of Sheffield and Webster avenues. It will be all stone, 160 by 175 feet in size. Also for W. L. Russell, on the northeast corner of Fifty-sixth street and Washington avenue, a four-story apartment house, 94 by

130 feet; to be of Bedford stone and Roman tile front; have hardwood finish, all improvements, and cost $100,000. Also finishing plans for St. Patrick's church, to be erected at Milwaukee. It will be constructed of Milwaukee pressed brick, and have steam heating, electric light, etc., and cost $50,000. Also completed drawings for the wing to the Sisters of Mercy hospital, on Tweuty-sixth street and Calumet avenue. It will be four-story and basement, 149 by 105 feet in size; of Roman tile, terra cotta and Bedford stone; have steam heating, electric light, elevators, all the sanitary improvements; to be of slow burning construction, and cost about $125,000.

Architect A. Druiding: For Rev. Seubert, at Menasha, Wisconsin, a two-story school, 60 by 85 feet in size; to be of brick and stone, have steam heating, sanitary plumbing, etc.; cost $20,000. Finishing plans for St. Lawrence church, 68 by 180 feet in size, to be erected at Cincinnati, Ohio. It will be of handsome Gothic design with two towers, 235 feet and 185 feet high, respectively. Will be constructed of stone and have steam heating, electric light, etc.; cost about $100,000. Also making drawings for St. Alphonsus church, 50 by 132 feet in size, to be erected at Deerfield, Michigau. It will be built of local brick aud stone, have pine finish, steam heat, bells, etc. Also made plans for St. Joseph's Academy, to be erected at Pittsburgh, Pennsylvania. It will be a four-story building, 86 by 165 feet in size, to be of pressed brick and stone, have steam heating, electric light, hardwood finish, etc. Also made drawings for St. Joseph's Academy and chapel, to be erected at Greenburg, Pennsylvania. To be three stories, 76 by 172 feet in size, of pressed brick and stone. Chapel and dining room to have seats for 700. Will put in steam heating, all the sanitary conveniences, electric light, tile floors, kitchen outfit, hardwood interior finish, etc.

Architect Franklin P. Burnham: For Charles S. Smith, at Kenilworth, a two-story residence, to be of frame, with stone basement, hardwood finish, electric light and all improvements. For F. R. Grimes, at Kenilworth, a two-story residence of Colonial style of architecture. It will be of frame with stone basement, have hardwood finish, furnace, electric light, laundry tubs, etc. For St. Mary's Academy, at South Bend, Indiana, a four-story and cellar addition, 60 by 120 feet in size, to be of common brick with stone trimmings.

Architect J. M. Schroeder: For John Styx, at Twenty-sixth street and Portland avenue, a three-story and basement store and flat building, 25 by 110 feet, to be of Bedford stone front, have Georgia pine finish, all sanitary improvements, bells, speaking tubes; cost $15,000. For Charles Lemm, at Ninety-ninth street and Michigan avenue, a two-story frame building, 50 by 110 feet in size, to contain stores and hall. Will put in gas fixtures, bells, speaking tubes, etc.

Architects Powell & Kingsley: For the Graceland Cemetery Company, on Beacon street, Sheridan Park, a two-story frame residence, to have stone basement, hardwood interior, electric light, furnace, all sanitary improvements; cost $8,000. For R. J. Puster, at Adams street near Ellis avenue, a two-story flat building, 25 by 66 feet, to be of Bedford stone front. For Ed J. Bowes, Jr., & Bros., on Washington boulevard near Albany avenue, two three-story stone front residences; to cost $20,000. For same owners, at Ingleside avenue near the Chicago University, a three-story dormitory, 48 by 90 feet in size, to be of stone front, have hardwood interior, steam heating, electric light, sanitary plumbing; cost $24,000.

Note.—Ernest J. Ohrenstein (late of Jaffrey & Ohrenstein) has formed a partnership with T. C. Goudie and they have located in a handsome suite of offices at 115 Dearborn street, suite 56 and 57. Mr. Ohrenstein will take full charge of the office duties and Mr. Goudie will have charge of the outside and look after construction.

Cincinnati, Ohio.—Reported by Lawrence Mendenhall. The outlook for a good spring trade is exceedingly good and architects feel pretty well satisfied. The improvements will be of a substantial nature, and the city can be proud of what her citizens, aided by her architects and contractors, will do. Many beautiful residences will be built and added to those already erected by her men and women of wealth. But with all her wealth, art, music aud progressiveness, Cincinnati's citizens can learn much in house design and construction by visiting other cities of even a smaller population. To be sure some architects are extravagant in their ideas, but if more attention was paid to art as seen in architecture, as suggested by architects, a more beautiful effect in house building would be secured. Granting that all purses do not contain equal amounts, yet just a little more money spent, when you do build, would add to the value of the neighborhood and in turn to the house. The strike volcano is beginning to mutter and boil in the shape of a demand from the bricklayers of $4.50 per day of eight hours instead of nine, which will add nearly ten per cent to the price of labor. This will not only entail a serious loss on contracts not completed, but will I am afraid interfere with new ones.

Architects Rapp & Aiken reports: For J. M. Potter, Fifth street, plans for a four-story flat building; materials: pressed brick, stone, slate and tin roof, hot-air furnaces, mantels, grates, iron, plate glass, coal elevators, plumbing, gas, etc.; cost $20,000. For Dr. C. D. Palmer, a residence; materials: pressed brick, brownstone, hardwood finish, mantels, grates, furnace, tiling, blinds, stained glass, etc.; cost $10,000. For the Cincinnati Electric Light Company, in connection with the Cincinnati Gas Company, a new lighting plant; materials: pressed brick, tin roof, machinery, etc,; cost not given.

Architects J. H. Boll & Co. report: For Mrs. Catherine Lewis, a residence; materials: frame, slate roof, hardwood, grates, mantels, stained glass, etc.; cost $5,000. For W. T. Carter (American Laundry Company), a residence; materials: pressed brick, slate roof, hardwood, grates, mantels, stained glass, gas, plumbing, etc.; cost $6,000.

Architect Emil G. Rueckert reports: For Mrs. Charles Schiff, Clifton, Cincinnati, Ohio, a residence; materials: pressed brick, freestone, slate roof, hardwood finish, furnace, grates, mantels, stained glass, gas, plumbing, etc.; cost $8,000.

Architects Des Jardins & Hayward report: For Mr. Max Loewenstein, a residence; materials: pressed brick, slate roof, hardwood, furnace, grates, mantels, stained glass, gas, plumbing, etc.; cost $15,000.

Architects Rieg & Marty report: For the Catholic congregation at Delhi, care W. H. Elder, archbishop, Cincinnati, a church and convent; size of church 44 by 133 feet, size of convent 28 by 77 feet; three stories high; materials: brick, slate roof, furnace, stained glass, etc.; cost $40,000.

Architect William Martin Aiken has prepared plans for a residence for Mr. F. Schultze, 20 West Fourth street; materials: frame, slate roof, furnace, grates, mantels, stained glass, gas, plumbing, etc.; cost $6,000.

Architects Crapsey & Brown report a schoolhouse for Pleasant Ridge, Ohio; materials: brick, slate roof, furnace, blackboards, desks, etc.; cost $12,000. Church at Loudon, Ohio, for the Presbyterians; materials: brick, slate roof, furnace, pews, stained glass, hardwood, gas, plumbing, etc; cost $20,000.

Architect James W. McLaughlin reports: For R. H. Shoemaker, a residence; materials: pressed brick, stone trimmings, furnace, stained glass, hardwood, coal elevator, dumb waiters, laundry fixtures, mosaic floor, gas, plumbing, etc.; cost $20,000.

Architect G. W. Drach has drawn plans for a residence for R. H. Wood, care architect; materials: frame, slate roof, furnace, stained glass, hardwood, grates, mantels, gas, plumbing, laundry fixtures, etc.; cost $5 500.

Mr. Albert Erkenbrecher is going to have built a handsome store building on Fourth and Elm streets.

There is strong talk of a large hotel being built by a syndicate on the site of the present Burnet House. Col. T. W. Zimmermann, Burnet House, can give information.

Cleveland, Ohio.—Architects French & Chapman: For Hon. P. Henry Smyth, a residence, all of stone, 52 by 75 feet; cost $15,000, to be built in East Cleveland, Ohio.

Architect F. C. Bate: For E. A. Schellentrager, Glenville, Ohio, a frame residence, 29 by 52 feet; cost $7,000. For S. C. Morris, Nottingham, Ohio, frame residence and stable, 28 by 40 feet; cost $5,000. An armory for the Cleveland Grays, of brick and stone, 100 by 210 feet; cost $40,000. For Z. W. Davis, Canton, Ohio, stone residence, 48 by 72 feet; cost $40,000. For H. L. Hines, Mantua, Ohio, frame residence, 38 by 65 feet; cost $22,000. For J. H. Clauss, frame residence at Fremont, Ohio, 35 by 65 feet; cost $16,000. For C. W. Upson, frame and brick residence, 40 by 60 feet; cost $14,000. For J. D. Maloue, stone and frame residence, 48 by 70 feet; cost $15,000. For Mrs. J. Magerth, brick block, at corner of Cedar avenue and Vienna street; 68 by 70 feet; cost $12,000.

Architect J. W. Russell: For H. E. Teachout, frame residence, Kennard street; cost $7,000. For Hal. C. Brent, three frame residences, Euclid Heights; cost $6,000.

Architects Watterson & Dutton: For D. E. Wright, on Amesbury avenue, a brick and frame residence; cost $8,000.

Denver, Colo.—Architects Edbrooke & Co.: For T. Smith, a two-story residence, size 27 by 46 feet; brick and stone; cost $5,000. For the George Fritch Hardware Company, a one-story addition to business block, size 50 by 120 feet; brick and stone; cost $5,965.

Architects Balcombe & Rice: For C. J. Hellier & Co., two two-story dwellings; brick and stone, size 26 by 46 feet; cost $12,000.

Architects Kirchner & Kirchner: For A. Gustofson, a three-story business block; stone and brick, size 50 by 77 feet; cost $15,900.

Architects Lee & Boal: For John C. Mitchell, two-story residence, size 32 by 58 feet; brick and stone; cost $7,000.

Architect W. L. Rice: For Ida C. Butler, two-story dwelling; brick with stone trimmings, size 32 by 40 feet; cost $6,000. Also a two-story brick dwelling, size 34 by 44 feet; cost $5,000.

Architect Robert S. Roeschlaub: For School District No. 1, two-and-one-half story stone and brick building; size 104 by 158 feet; cost $53,000.

Architect W. P. Fesh: For J. W. Gordon, three two-story dwellings, size 30 by 46 feet each; stone and brick; cost $24,000. For W. G. Nogely, a two-story residence, stone and brick; size 25 by 35 feet; cost $5,000.

Architect McD. Graham: For the Pullman R. C. and Construction Company, a two-story stone and brick dwelling, size 44 by 64 feet; cost $5,000.

Architects Jackson & Rivenius: For the South Broadway Baptist Church Society, addition to church, to cost $10,000.

One hundred and thirty-seven permits issued in January—$391,641.

Outlook here for coming season is splendid.

Detroit, Mich.—Architects Malcomson & Higginbotham: For the Board of Education, a twelve-room school building, brick with stone trimmings; size 70 by 100 feet; to cost $30,000; also for an eight-room school building, same construction; cost $20,000.

Architects A. C. Varney & Co.: For F. N. Varney, a two-story brick double residence, front of pressed brick trimmed with Ashland brown; to cost $5,000. For Richard W. Allen, a four-story brick block of stores and residence flats; to cost $25,000.

Architects E. A. Walshe & Son: For the United States Optical Company, a three-story brick building; size 50 by 100 feet; brownstone trimmings, steam heat; cost $25,000. Also preparing plans: For Robert J. Wilson, for a two-and-a-half-story brick residence, with stone trimmings; to cost $10,000. For Arthur Bassett, a two-and-a-half-story brick residence; to cost $9,000.

Architect H. A. Brede: For Fred G. Marshall, a two-story brick store and residence flat; to cost $7,000. For the Gobel Brewing Company, a two-story brick office building; to cost $9,000.

Architect Peter Dedericks, Jr.: For J. H. Cole, a block of two four-story brick stores and residence flats; cost $8,000. For the White Eagle brewery, an addition; to cost $13,000.

Architect Edward C. Van Leyen: For Mrs. Caroline Biehler, a two-story frame residence; to cost $6,000.

Architect Thomas Hyland: For George Atchison, a two-story residence, brick with brownstone trimmings, slate roof; to cost $10,000.

Architects Spier & Rohns: For Joseph R. Webb, a two-story dwelling; to cost $8,000.

Architects Donaldson & Meier: Andrew McLellan, a two-story brick residence.

Architect R. E. Raseman: For Nelson Baker & Co., a three-story brick laboratory, with stone trimmings; size 130 by 130 feet; cost $20,000.

Kansas City.—Architect A. Van Brunt: An academic building and dormitory for William Jewell College at Liberty, Missouri; a three-story brick, with modern improvements, to cost $30,000. A suburban home for Gardner Lathrop, a three-story brick, to cost $12,000.

Architects Hogg & Rose: A stone or brick church for the Presbyterian church of Wellington, Kansas; to cost $10,000. As stone is about as cheap as brick at Wellington, the former will propably be used. For the United Presbyterian church in Kansas City, Kansas, a brick church; to cost $7,000.

Louisville, Ky.—Architects Manry & Dodd report the following: Addition to the present works of the Curry Fertilizing Works, Buchanan and Washington streets, to cost $15,000; brick and stone, slate and metal roof, two stories in height. Six residences for Mr. H. Straus, Second street near Oak; to cost $35,000; brick and stone, slate and metal roofs, three stories in height. Alterations to dry goods house for Mr. H. Straus; cost $4,000; Market street, between Fourth and Fifth. Residence of Mr. R. M. Martin, to be frame; location, Wilder's Park; to cost $16,000; shingle roof, hardwood finish. Stable for Mr. R. M. Martin; to cost $4,000; frame, with shingle roof. Residence for Charles Hibbard, located in Beachmont, to cost $5,000; to be frame, with shingle roof. Flat building, adjoining Macauley's theater, Walnut street, between Third and Fourth; to cost $9,000; three stories, metal roof. Alteration of residence for Major C. J. F. Allen, located on Fourth avenue; to cost $10,000. Residence for George T. Wood; to cost $6,000; brick, shingle roof; location, New Broadway. Residence for Miss S. Stewart; to cost $5,000; brick, slate roof; location, First street near Oak.

Architects Clarke & Loomis report the following: Alterations in residence for J. L. Smyser, on New Broadway; to cost $8,000. Alterations in stable; brick; to cost $2,200. For Louisville Public Warehouse Company, warehouse; to cost $28,000; brick and stone, asphalt roof, four stories high, containing ten stories of ricking. Alterations in office building for W. C. Priest & Co.; to cost $2,200; location, Fifth street, between Market and Jefferson. Residence for Helm Bruce, three stories, brick and stone, slate roof; to cost $11,400. Building for Louisville Industrial School of Reform; three stories, brick and stone, metal roof; to cost $15,000; location, First street, between F and G.

Milwaukee, Wis.—The Methodist Missionary Society will erect a chapel early in the Spring.

Architect Henry Starbuck is preparing plans for a new Rectory for the St. John's Episcopal Society.

Minneapolis, Minn.—Architect Harry W. Jones reports plans for a $40,000 flat building, to be erected in the spring for Erich Lund; it will be of red pressed brick and brownstone, with all modern conveniences. Also a residence for G. W. Pratt, on Clifton avenue; to cost $30,000; it will be of Bedford stone, with all modern improvements and a large ball room on the third floor. Also a building of twenty-four flats for E. J. Davenport, at the corner of Oak Grove street and Vine Place; it will be of stone and brick, with all modern conveniences, and will cost $100,000.

Architects Long & Kees report plans for an addition to the Kasota block, for C. Goodrich; it will be of Kasota stone, eight stories in height, and will cost $100,000.

Pittsburgh, Pa.—Architect A. E. Obitz is preparing plans for Hoffman & Bonn for two brick and frame houses to be erected on Aliquippa Place.

The Centenary M. E. Church will erect a new church buildiug, size 90 by 126 feet; to cost about $128,000.

The Columbus Club will erect a new club building to cost about $50,000 in the early spring. The Athletic Club are considering plans for a new club building on an extensive plan. There are to be three distinct buildings inclosed by a six-foot stone wall; one building is to be devoted to social purposes, another for athletic purposes and the third for the junior members.

St. Louis, Mo.—Architect W. S. Swasey: For the University Club, a two-story addition, size 44 by 9 feet; brick; to cost $6,000.

Architect E. Jugenfeld & Co.: For the St. Louis Brewing Association, a four-story brick brewery, size 57 by 95 feet; cost $30,000.

Architects Kennedy & Matthews: For the Buck Stove and Range Company, a four-story brick warehouse, size 90 by 133 feet; cost $11,000.

Architect J. B. Leeg: For J. G. Brant, an eight-story brick hotel, fireproof; cost $85,000.

Architects Peabody, Stearns & Co: For the Collier estate, a seven-story building, size 60 by 150 feet; cost $110,000.

Architect J. J. Robinson: For Mrs. J. C. Cornwell, a two-story flat building, size 63 by 100 feet; cost $13,000.



RESIDENCE OF W. J. FABIAN, EVANSTON, ILLINOIS.

RAEDER, COFFIN & CROCKER, ARCHITECTS, CHICAGO.



INLAND ARCHITECT PRESS.

RESIDENCE FOR J. L. COCHRAN, EDGEWATER, ILLINOIS.

J. L. SILSBEE, ARCHITECT, CHICAGO.



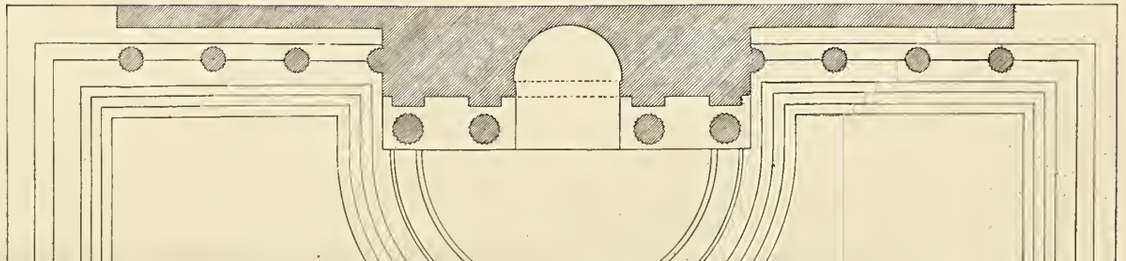
THE U. S. MAIL CHUTE AND SPECIAL MAIL BOX IN ADMINISTRATION BUILDING, WORLD'S COLUMBIAN EXPOSITION, CHICAGO.

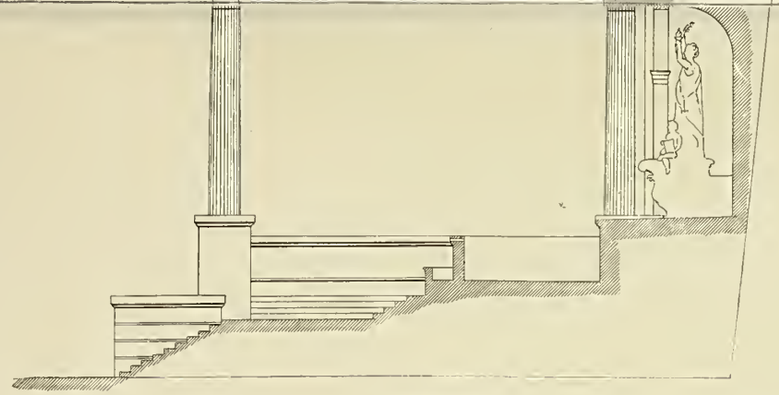
THE CUTLER MANUFACTURING COMPANY, SOLE MAKERS, ROCHESTER, N. Y.





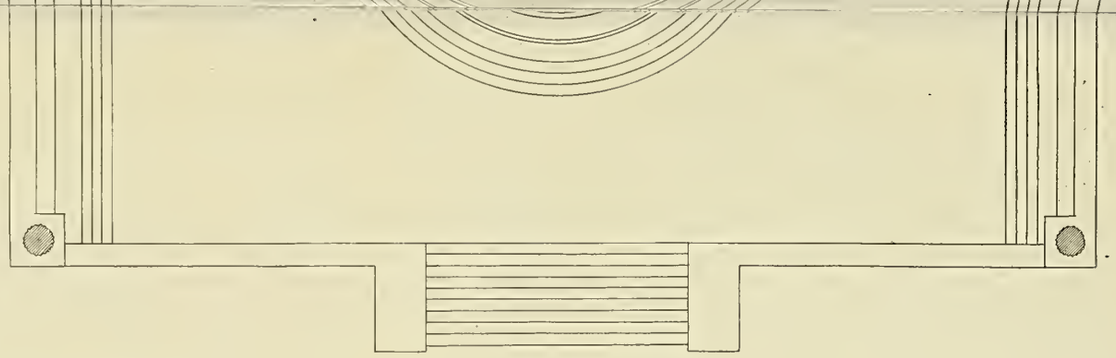




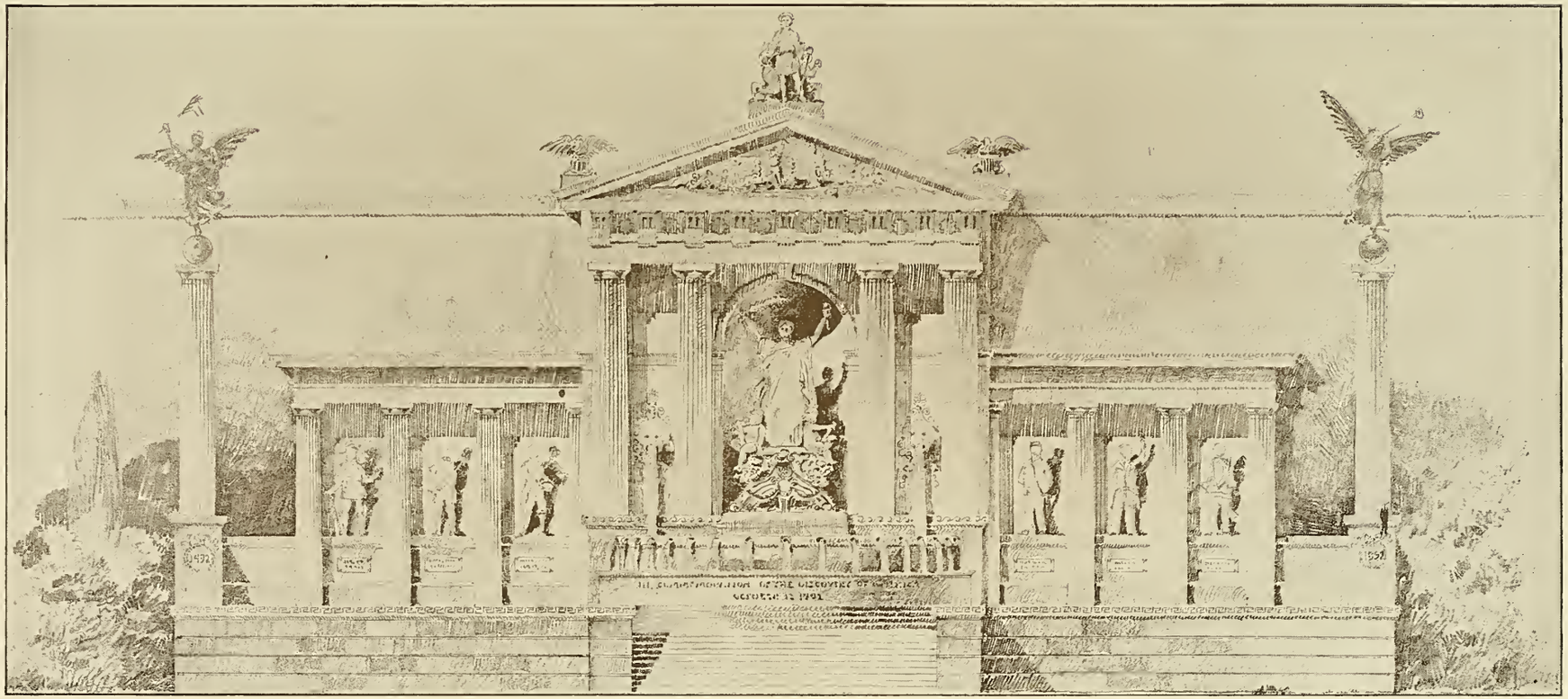


·SECTION·

SCALE ½ INCH = 1 FOOT



·PLAN·



A FOUNTAIN
TO COMMEMORATE THE DISCOVERY
OF AMERICA.

THE DORIC STYLE OF ARCHITECTURE HAD BEEN USED AS THE BASIS FOR THE DESIGN OF THIS FOUNTAIN BECAUSE OF ITS SIMPLE GRANDEUR AND REPOSE. PROPORTIONS BEING CONSIDERED BY THE AUTHOR BEST FITTED FOR A MONUMENT DEVOTED TO SO IMPORTANT A PURPOSE, THE COMMEMORATION OF THE DISCOVERY OF AMERICA.
THE CENTRAL GROUP IS SYMBOLIC OF THE PROGRESS OF COLUMBIA. A FIGURE OF THE DISCOVERER SURMOUNTS THE PEDIMENT.
THE NICHES ON EITHER SIDE ARE TO CONTAIN STATUES OF ILLUSTRIOUS AMERICANS, WHILE THE ISOLATED COLUMNS IN THE FOREGROUND ARE SURMOUNTED BY FIGURES REPRESENTING PEACE AND PROSPERITY.

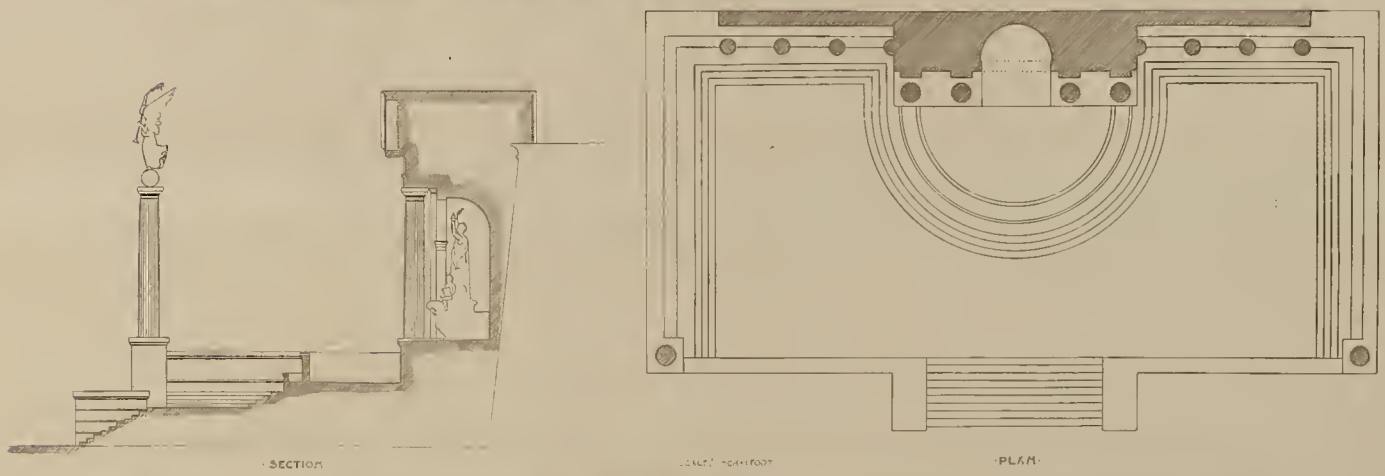
COLUMBIA

·SIXTH·ANNUAL·COMPETITION·
·ARCHITECTURAL·LEAGUE·N·Y·

A FOUNTAIN TO COMMEMORATE THE DISCOVERY OF AMERICA. DESIGN AWARDED SILVER MEDAL, NEW YORK ARCHITECTURAL LEAGUE, COMPETITION OF 1892.

SUBMITTED BY HOBART A. WALKER, OAK PARK, ILLINOIS.







A FOUNTAIN
TO COMMEMORATE THE DISCOVERY
OF AMERICA.



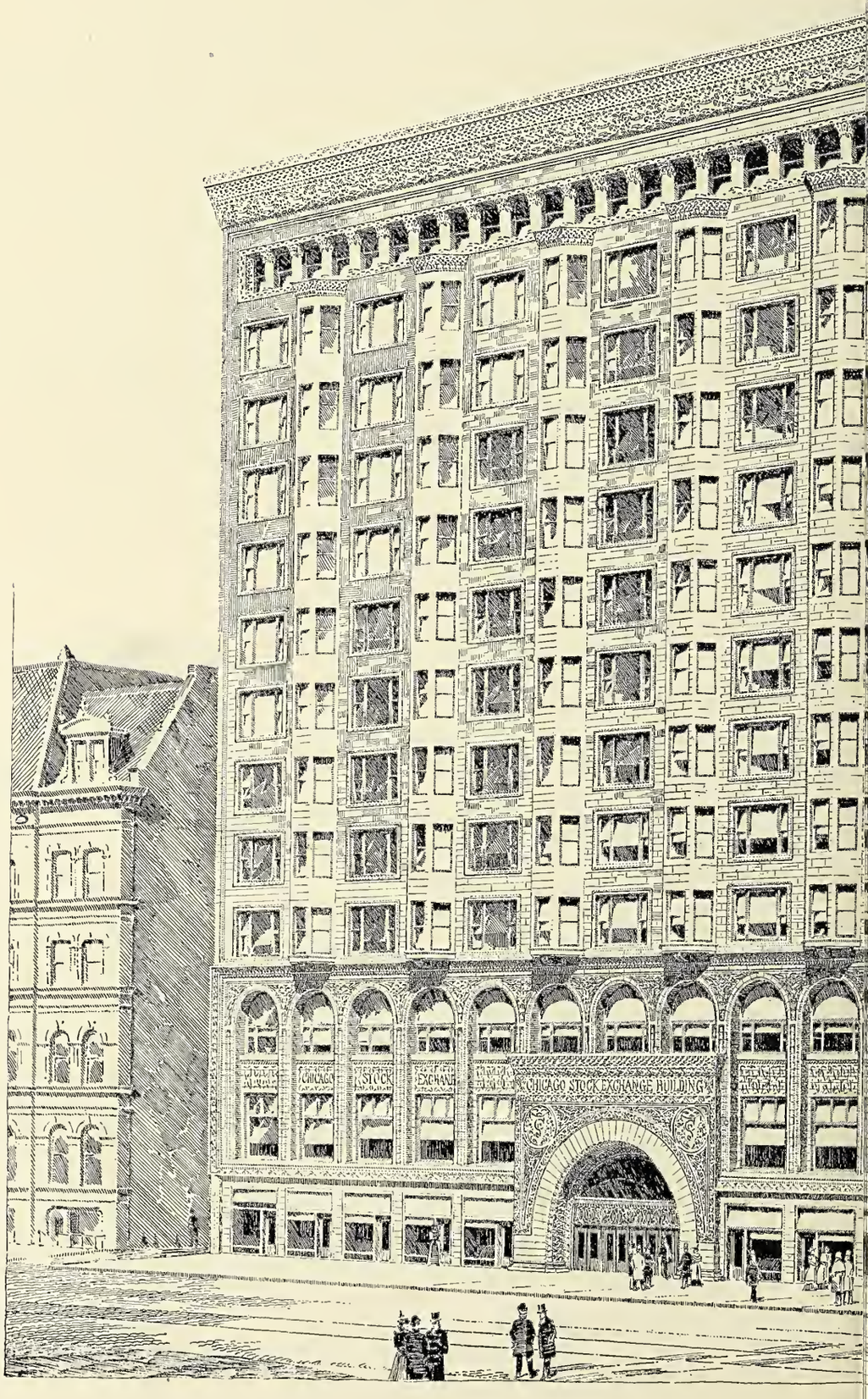


A FOUNTAIN TO COMMEMORATE THE DISCOVERY OF AMERICA. DESIGN AWARDED SILVER MEDAL, NEW YORK ARCHITECTURAL LEAGUE, COMPETITION OF 1892.

SUBMITTED BY HOBART A. WALKER, OAK PARK, ILLINOIS.

CHICAGO. STOCK. EXCHANGE. BUILDING.

ADLER. AND. SULLIVAN.
ARCHITECTS.

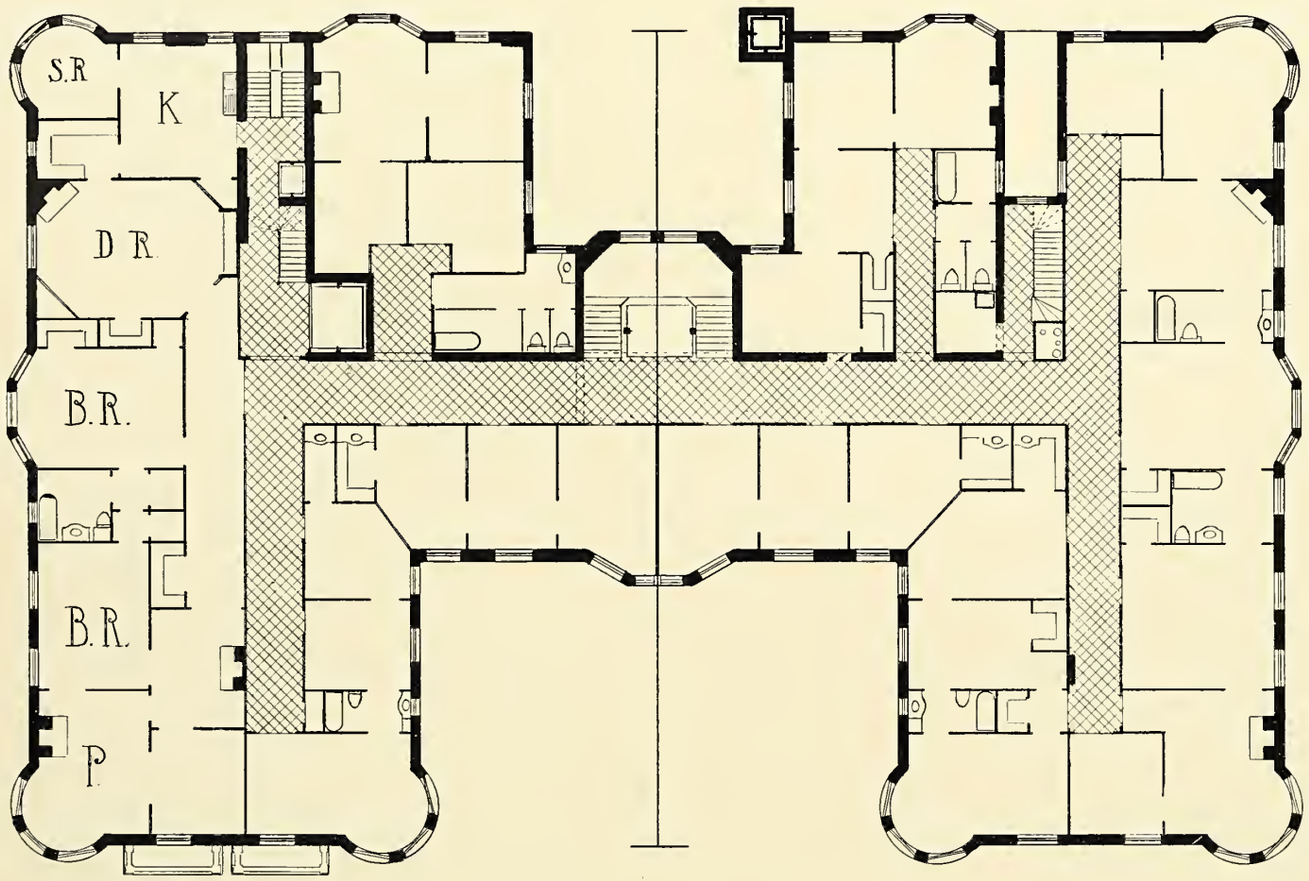




CHICAGO. STOCK. EXCHANGE. BUILDING.

ADLER. AND. SULLIVAN.
ARCHITECTS.



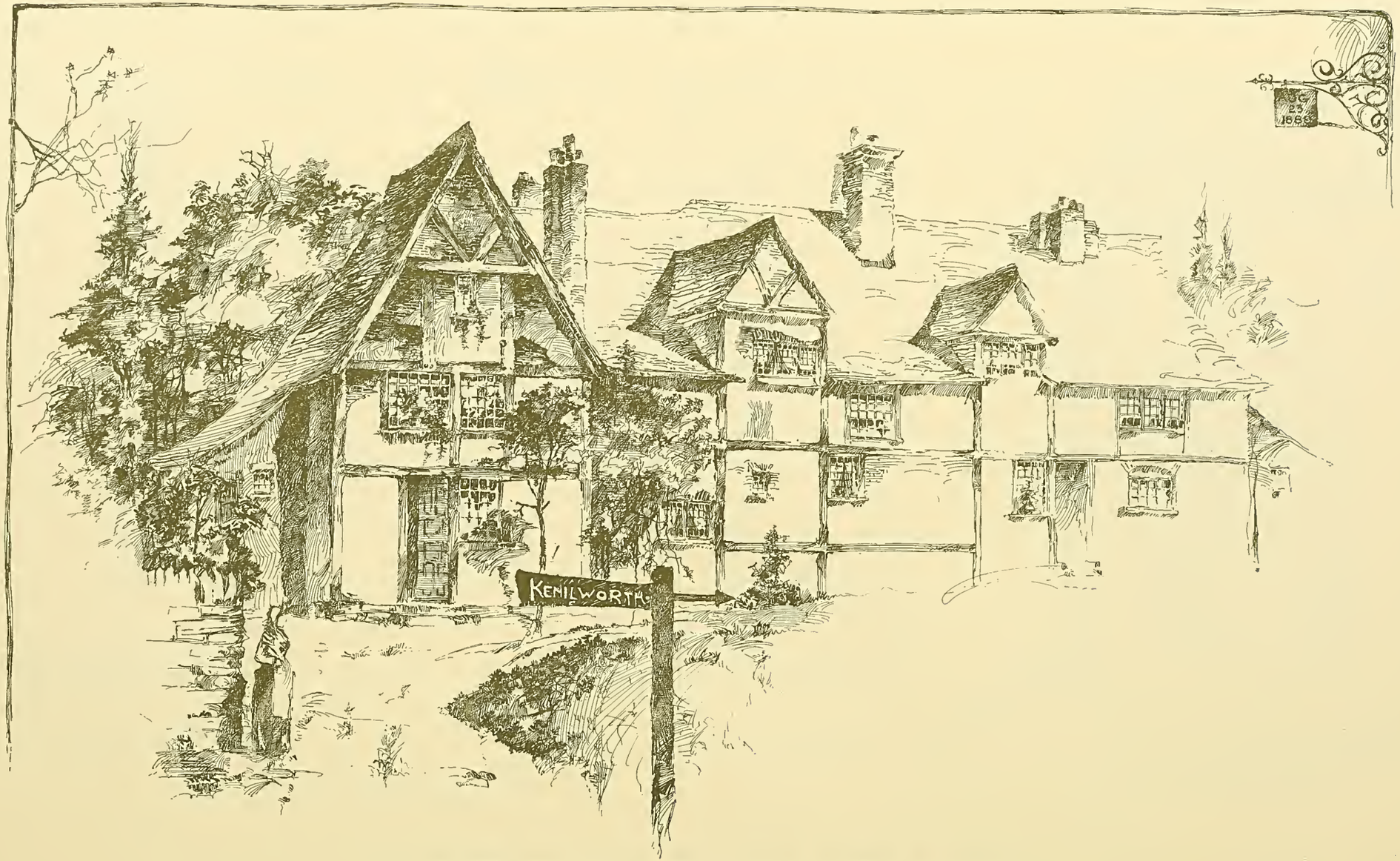


HALF OF LOWER STORIES.

HALF OF UPPER STORIES.

SINGLE ROOMS ARE NOT LETTERED.





OLD HOUSES OPPOSITE KENILWORTH CASTLE, ENGLAND.

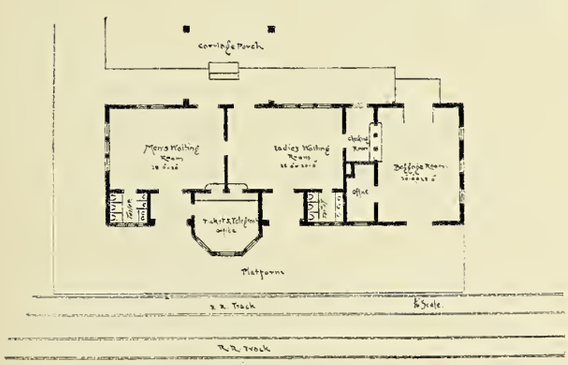
SKETCHED BY FRANK A. HAYS, PHILADELPHIA.

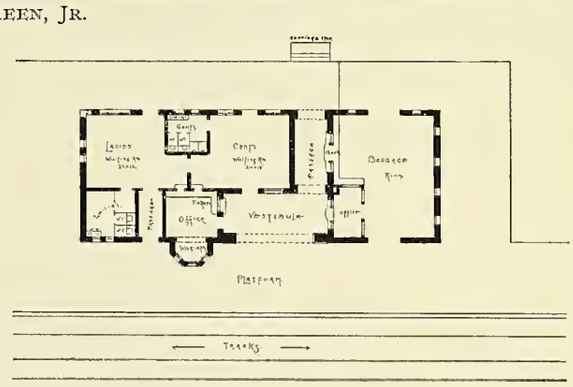
RESIDENCE FOR
EUGENE H. FISHBURN ESQ.
CHICAGO.
FREDERICK W PERKINS. ARCHITECT.
115 E. MONROE ST.

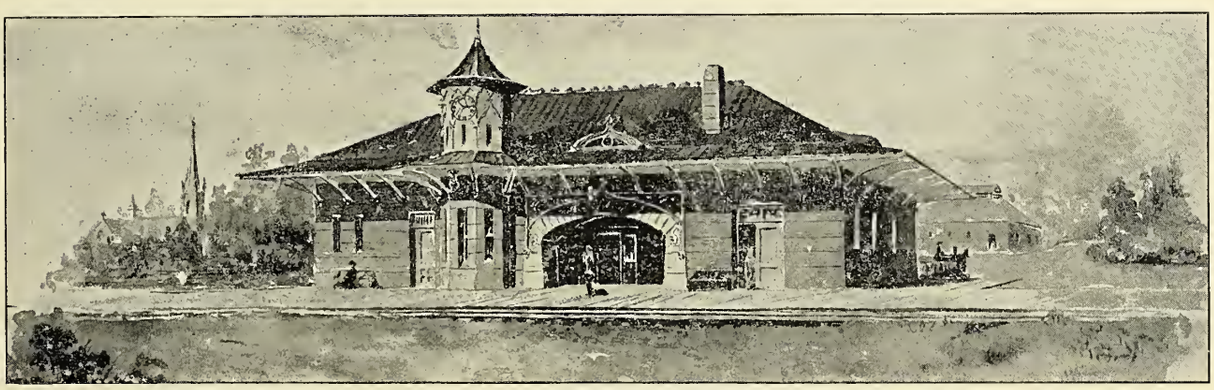




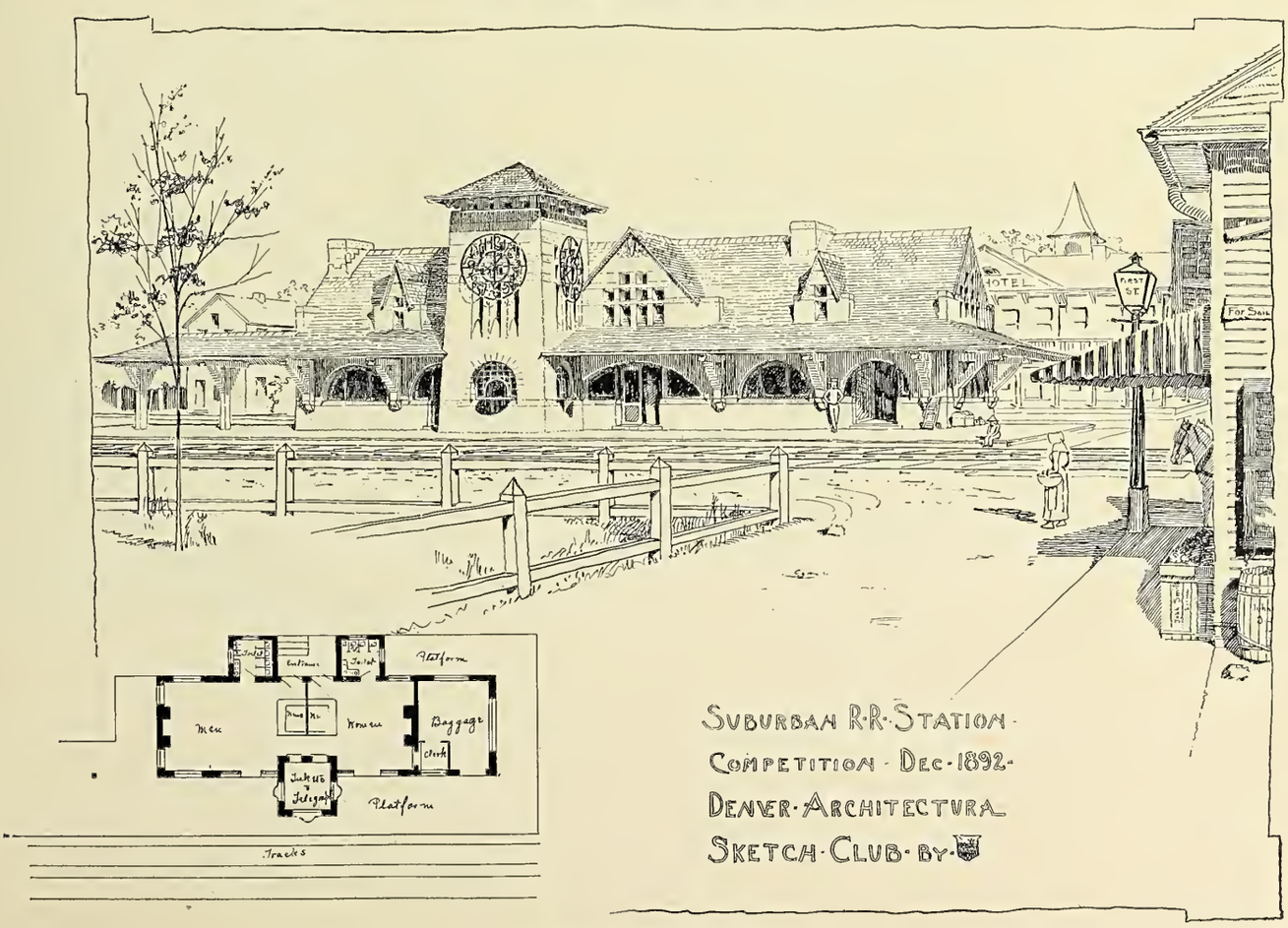
SECOND PLACE. T. A. GREEN, JR.





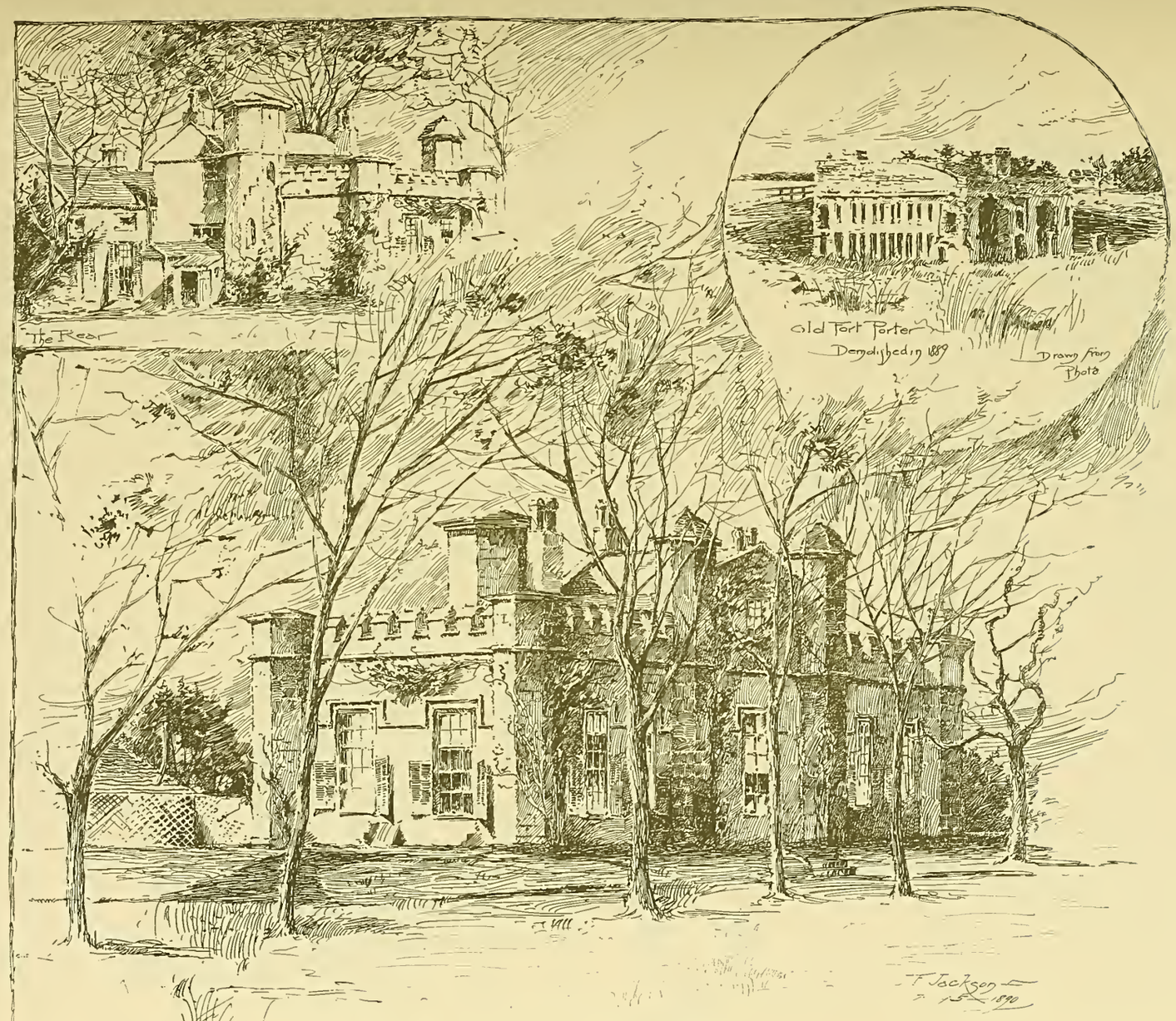


FIRST PLACE. HARRY THOMAS, JR.



THIRD PLACE. W. PELL PULIS.

DENVER ARCHITECTURAL SKETCH CLUB COMPETITION. SUBURBAN RAILROAD STATION.



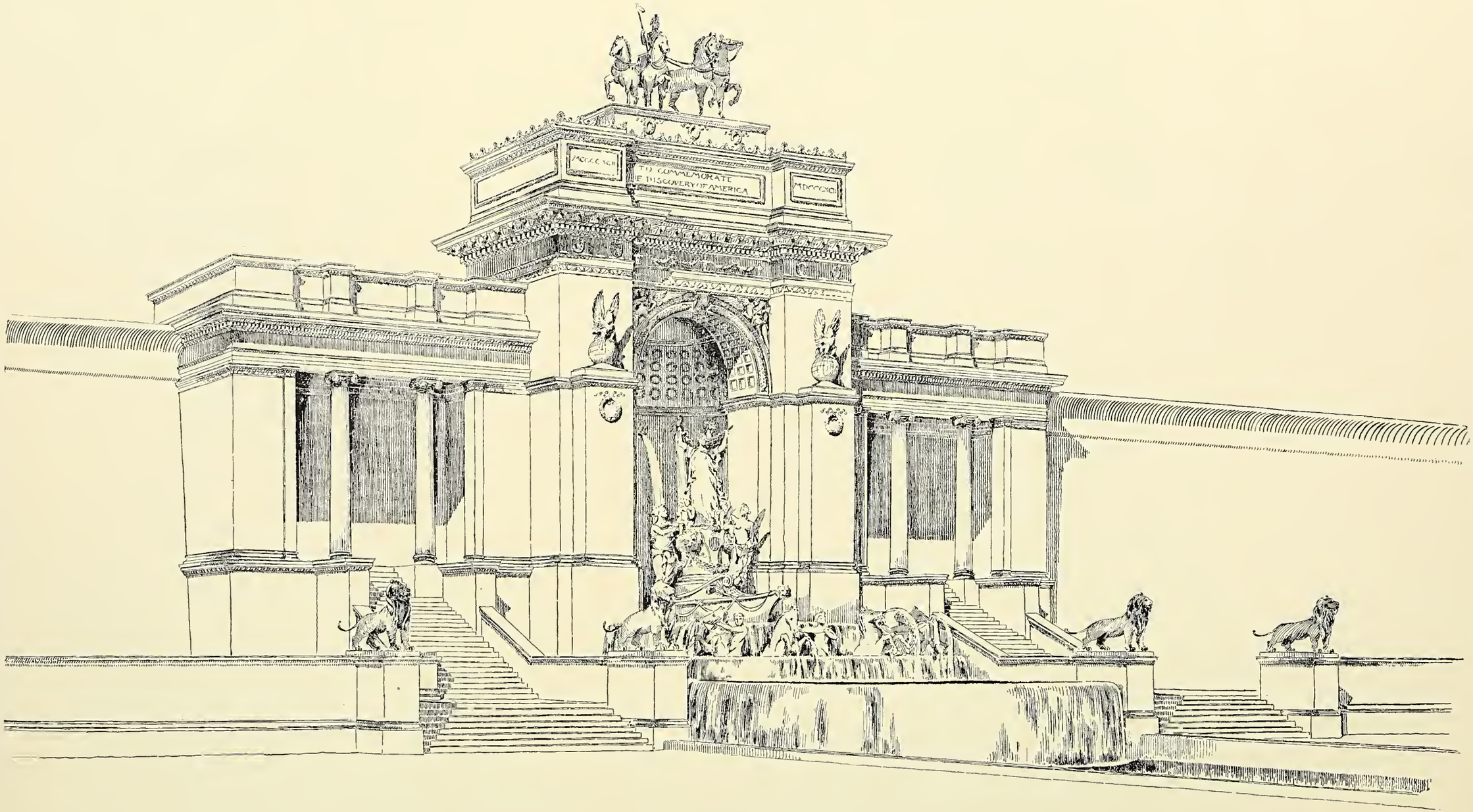
Sketches at The Front
Buffalo NY

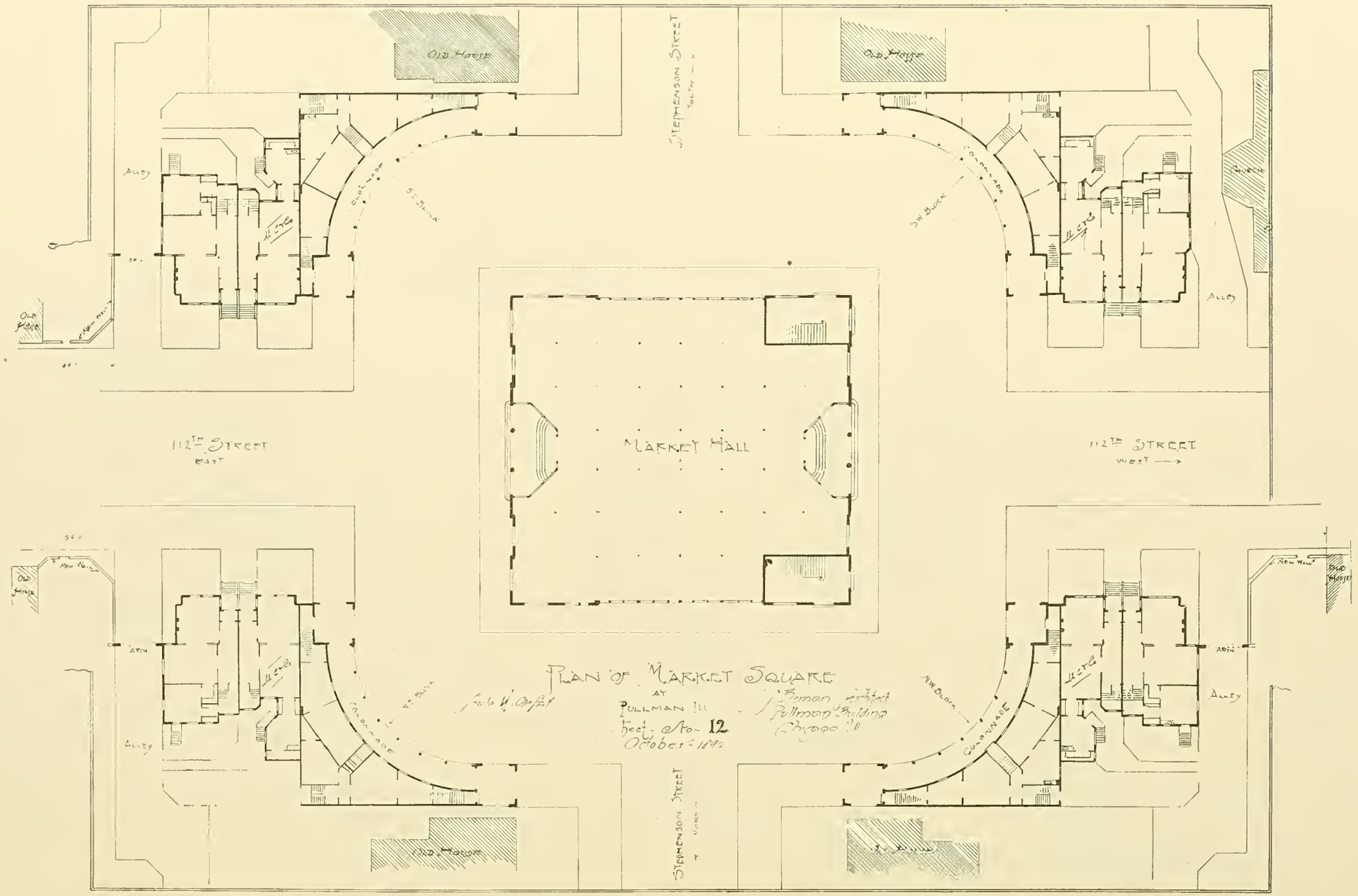
The Castle
General View

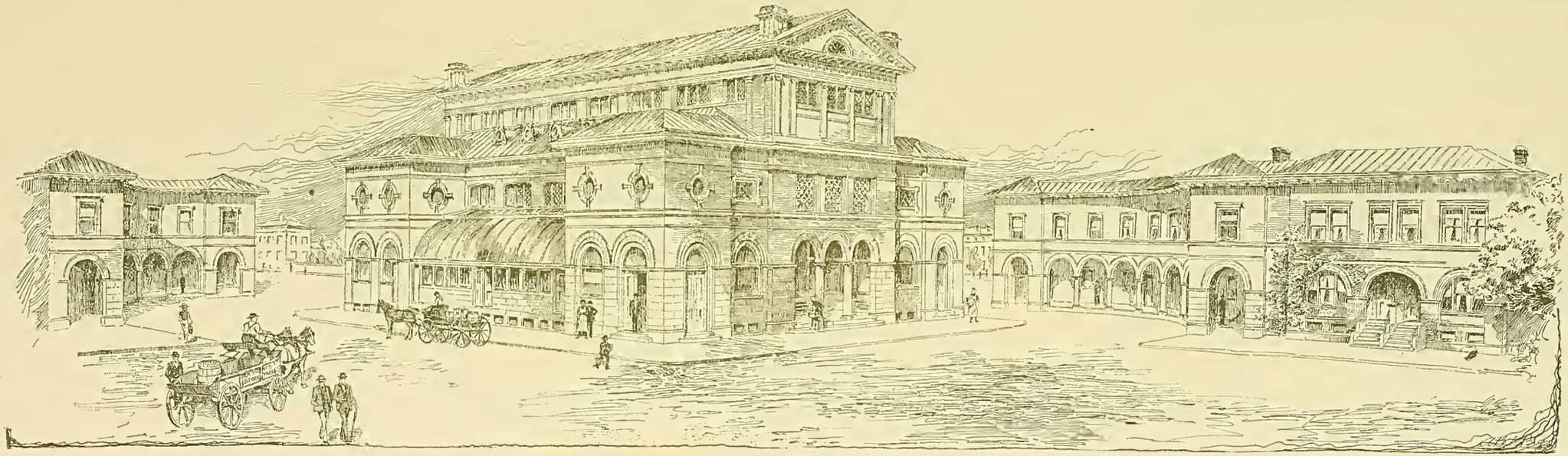


THE KENWOOD APARTMENT BUILDING, FOR FRANK H. FOSTER, CHICAGO.

CHARLES S. FROST, ARCHITECT.

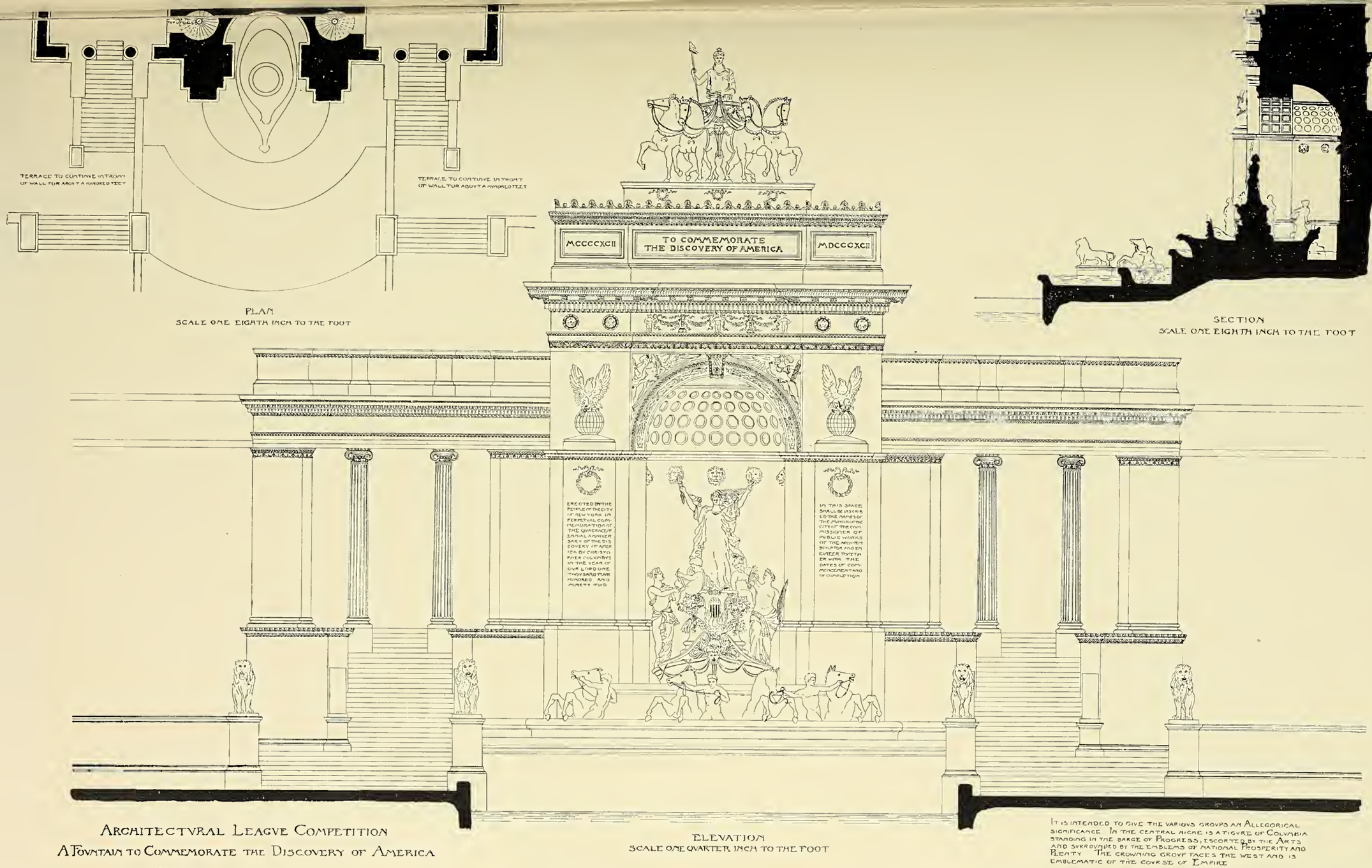

TO COMMEMORATE
F DISCOVERY OF AMERICA


Old House
Stephenson Street
Alley
Colonnade
SE Block
SW Block
NW Block
NE Block
112th Street
East
West
Market Hall
Plan of Market Square
at
Pullman Ill.
Sheet - No. 12
October 1892
Solon S. Beman, Architect
Pullman Building
Chicago Ill.



MARKET HALL AND MARKET SQUARE DWELLINGS, PULLMAN, ILLINOIS.

S. S. Beman, Architect, Chicago.



PLAN
SCALE ONE EIGHTH INCH TO THE FOOT

SECTION
SCALE ONE EIGHTH INCH TO THE FOOT

ELEVATION
SCALE ONE QVARTER INCH TO THE FOOT

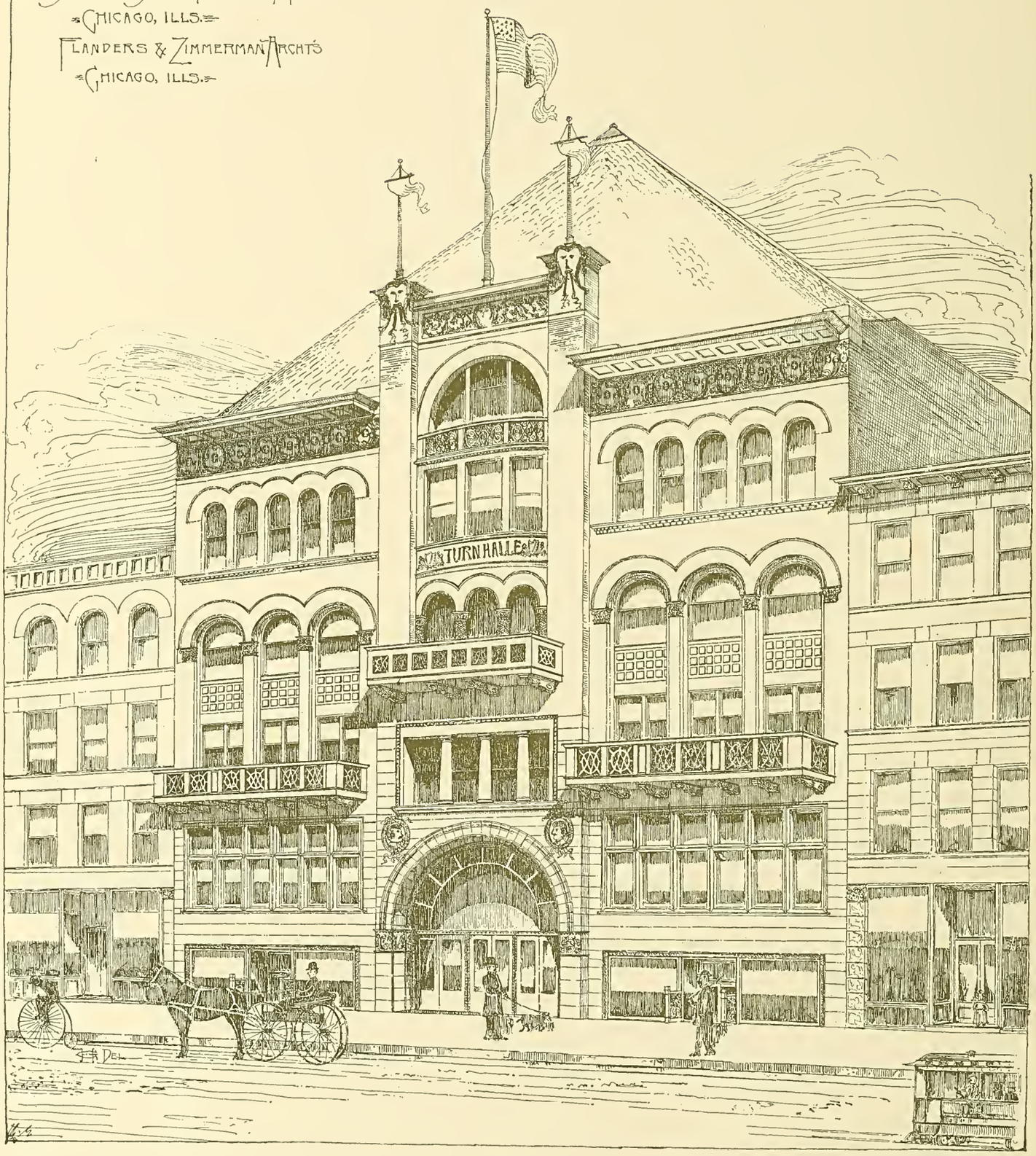
ARCHITECTVRAL LEAGVE COMPETITION
A FOVNTAIN TO COMMEMORATE THE DISCOVERY OF AMERICA
BY "FATHER KNICKERBOCKER"

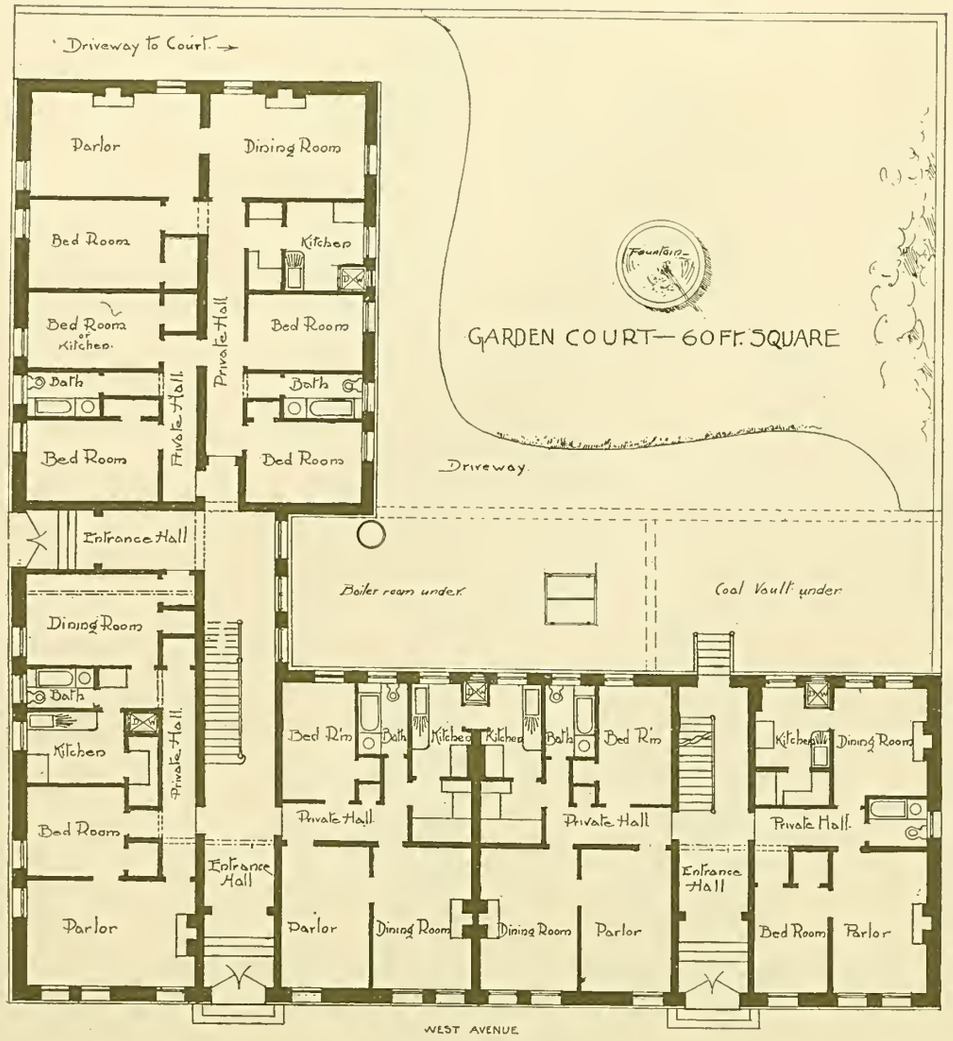
IT IS INTENDED TO GIVE THE VARIOVS GROVPS AN ALLEGORICAL SIGNIFICANCE. IN THE CENTRAL NICHE IS A FIGVRE OF COLVMBIA STANDING IN THE BARGE OF PROGRESS, ESCORTED BY THE ARTS AND SVRROVNDED BY THE EMBLEMS OF NATIONAL PROSPERITY AND PEACE. THE CROWNING GROVP FACES THE WEST AND IS EMBLEMATIC OF THE COVRSE OF EMPIRE

A FOUNTAIN TO COMMEMORATE THE DISCOVERY OF AMERICA. DESIGN AWARDED GOLD MEDAL, NEW YORK ARCHITECTURAL LEAGUE, COMPETITION OF 1892.

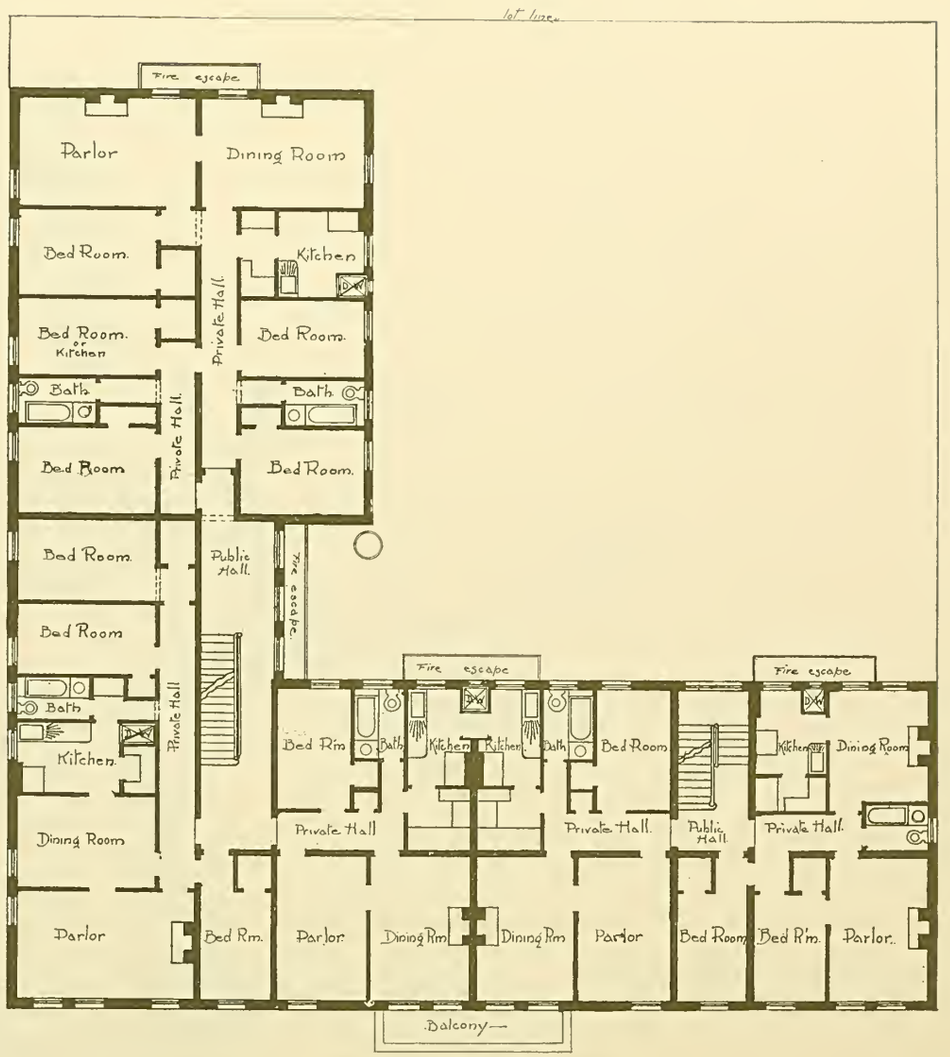
SUBMITTED BY ALFRED F. EVANS, CHICAGO.

SOUTH SIDE TURNER HALL.
CHICAGO, ILLS.
FLANDERS & ZIMMERMAN ARCHTS
CHICAGO, ILLS.





FIRST STORY PLAN

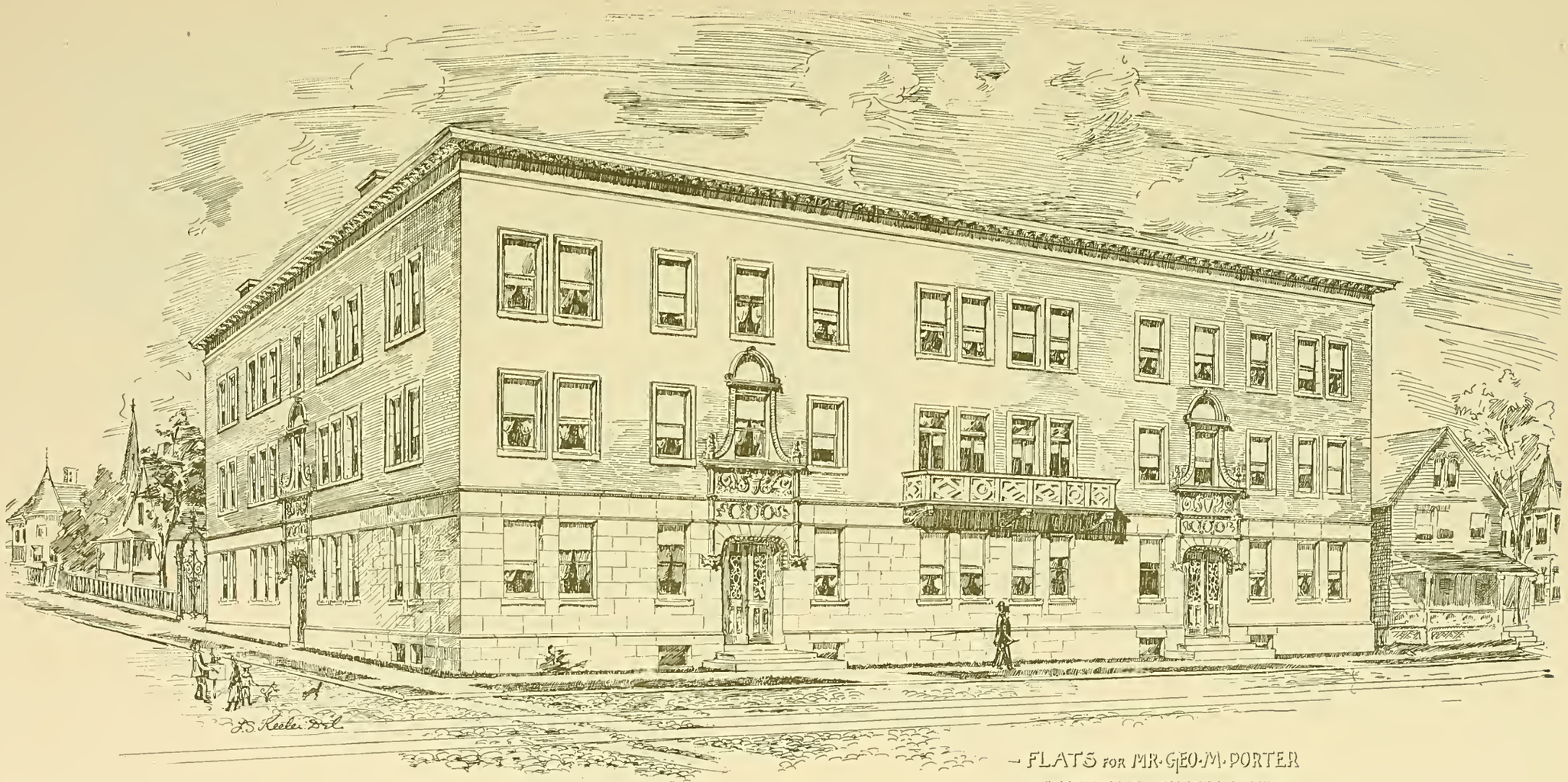


SECOND STORY PLAN

FLATS

FOR · MR · GEO · M · PORTER ·

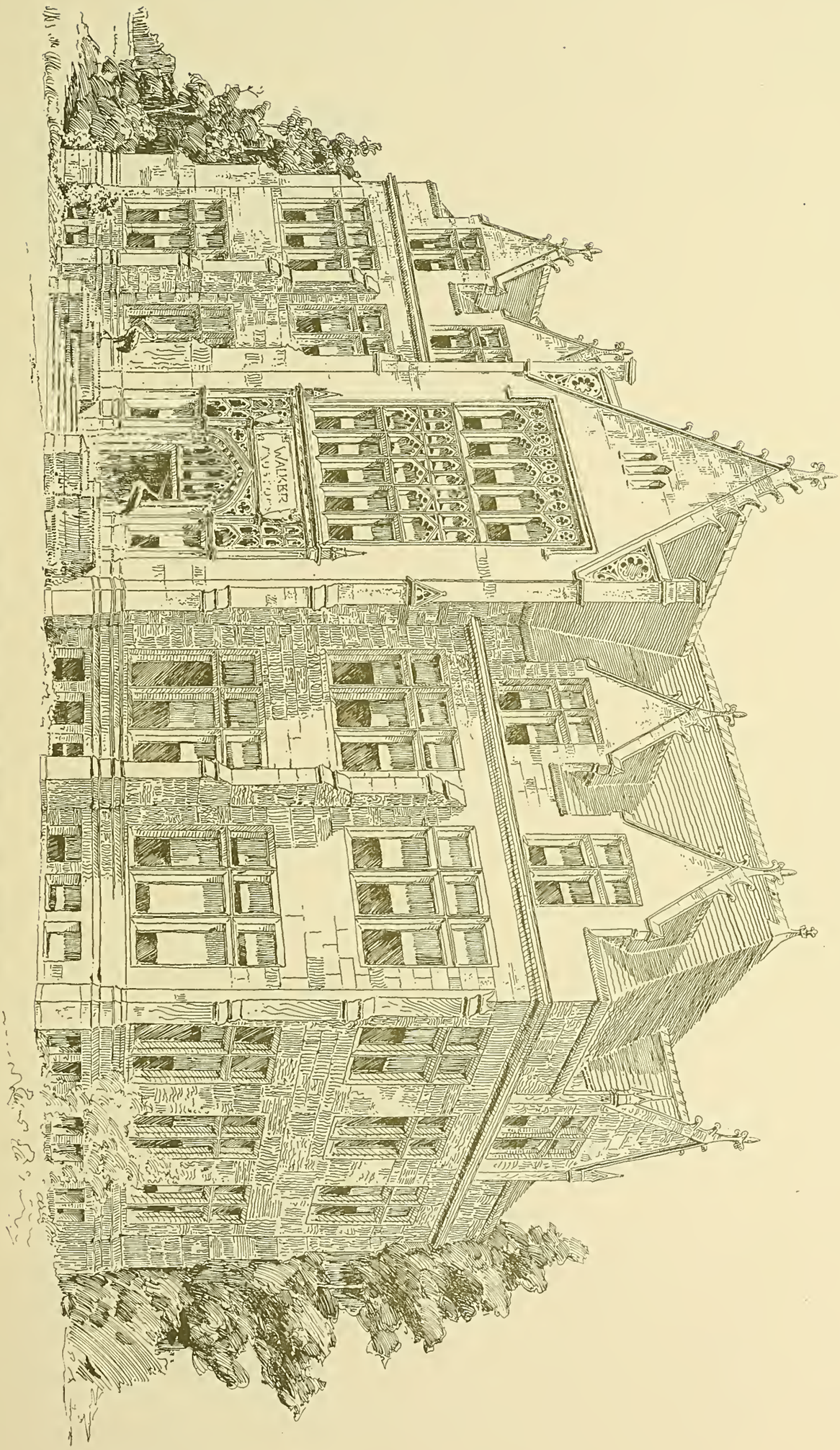
E · A · KENT — ARCH'T — BUFFALO · N · Y



– FLATS FOR MR·GEO·M·PORTER

·WEST·AVE· BUFFALO· N·Y·

E·A· KENT·ARCHT· BUFFALO



WALKER MUSEUM, UNIVERSITY OF CHICAGO.

HENRY IVES COBB, ARCHITECT.

THE INLAND ARCHITECT AND NEWS RECORD

Vol. XXI. MARCH, 1893. No. 2



A Monthly Journal Devoted to

ARCHITECTURE,

CONSTRUCTION, DECORATION AND FURNISHING

IN THE WEST.

PUBLISHED BY THE INLAND PUBLISHING CO.,
19 Tribune Building, Chicago, Ill.

L. MULLER, Jr., Manager. ROBERT CRAIK McLEAN, Editor.
C. E. ILLSLEY, Associate Editor.

SPECIAL CONTRIBUTORS:

DANKMAR ADLER,	D. H. BURNHAM,	W. L. B. JENNEY,
HENRY VAN BRUNT,	P. B. WIGHT,	IRVING K. POND,
WM. PAUL GERHARD,	LOUIS H. SULLIVAN,	ALLEN B. POND.

TERMS: Regular number, $5 a year; Photogravure edition, $10 a year. Single copies, Regular number, 50c.; Photogravure edition (including 7 photogravures), $1. Advance payment required.

The columns and illustration pages of THE INLAND ARCHITECT are open to all alike, merit and availability only determining what shall be published. Contributions appropriate to its pages are always desired.

AMERICAN INSTITUTE OF ARCHITECTS.

OFFICERS FOR 1893:

PRESIDENT . . . . EDWARD H. KENDALL, New York, N. Y.
SECRETARY . . . . ALFRED STONE, Providence, R. I.
TREASURER . . . . SAMUEL A. TREAT, Chicago, Ill.

VICE-PRESIDENTS:

FIRST VICE-PRESIDENT . . DANIEL H. BURNHAM, Chicago, Ill.
SECOND VICE-PRESIDENT . HENRY VAN BRUNT, Kansas City, Mo.

BOARD OF DIRECTORS:

For three years.

Theophilus P. Chandler, Jr., Phila., Pa. Joseph F. Baumann, Knoxville, Tenn.
George W. Rapp, Cincinnati, Ohio. P. P. Furber, St. Louis, Mo.
William G. Preston, Boston, Mass. R. W. Gibson, New York, N. Y.
*W. W. Clay, Chicago, Ill. C. H. Johnson, St. Paul, Minn.

For two years.

*Richard M. Hunt, New York, N. Y. C. F. McKim, New York, N. Y.
E. M. Wheelwright, Boston, Mass. William Worth Carlin, Buffalo, N. Y.
*James W. McLaughlin, Cincinnati, O. S. S. Beman, Chicago, Ill.
William S. Eames, St. Louis, Mo. William C. Smith, Nashville, Tenn.

For one year.

W. M. Poindexter, Washington, D. C. *George B. Ferry, Milwaukee, Wis.
C. J. Clark, Louisville, Ky. George C. Mason, Jr., Philadelphia.
Levi T. Scofield, Cleveland, Ohio. E. F. Fassett, Portland, Me.
M. J. Dimmock, Richmond, Va. A. W. Longfellow, Boston, Mass.

*These, with President, Secretary and Treasurer ex-officio, form Executive Committee.

STANDING COMMITTEES FOR 1893:

Committee on Foreign Correspondence.—Richard M. Hunt, chairman, New York, N. Y.; William Le Baron Jenney, Chicago, Ill.; R. S. Peabody, Boston, Mass.; C. F. McKim, New York, N. Y.; Henry Van Bruut, Kansas City, Mo.

Committee on Education.—Henry Van Bruut, chairman, Kansas City, Mo.; Professor William R. Ware, New York, N. Y.; Professor N. Clifford Ricker, Champaign, Ill.; A. W. Longfellow, Boston, Mass.; Theophilus P. Chandler, Jr., Philadelphia, Pa.

Committee on Uniform Contract.—Samuel A. Treat, chairman, Chicago, Ill.; William Worth Carlin, Buffalo, N. Y.; Alfred Stone, Providence, R. I.

Committee upon Conservation of Public Buildings.—Richard Upjohn, chairman, New York, N. Y., Presidents of the several Chapters.

Committee on Competition Code.—Charles E. Illsley, chairman, St. Louis, Mo.; J. W. Yost, Columbus, Ohio; J. G. Cutler, Rochester, N. Y.

Place of next Convention, Chicago, August, 1893.

The index for 1892, Volumes XIX and XX, will be issued with the April number.

Retrospective Glance at The Inland Architect.

In its February issue for the present year THE INLAND ARCHITECT indulged in a bit of retrospect on the occasion of its decicentennial anniversary. While adhering to its motto "*Nulla vestigia retrorsum*," and usually too busy to turn even an eye in any other direction than forward, a backward glance, if not taken oftener than once in ten years, may be pardonable as well as profitable. Not only in the artistic reproduction of architectural views, the promotion of the Stockslager Bill, the organization of builders and of architects, the record of improvements in the construction of office buildings, and in its services to the Columbian Exposition, but in numerous other directions this journal has aimed to be a leader of opinion, and an advocate of the most advanced practice and principles which consist with sound judgment.

Mortar Making by Machinery.

So accustomed is this age and people to the use of machinery for every conceivable purpose, that a person called on suddenly to name half a dozen articles in common service not made by machinery might find difficulty in replying. One such article is building and plastering mortar. While mortar mixing machines have been known and have had a limited employment for a dozen years, the mortar making industry is now practically where it stood when the natives of Erin first discovered their innate genius for handling the hoe. The results have not been wholly satisfactory in all respects; and the question may be submitted to antiquarians whether one reason for the superiority of ancient Roman mortar may not have been that the Green Isle had not then been discovered. A prospectus at hand offers mortar making machinery for sale, which shall insure thorough and uniform mixing of ingredients, rapidity, and cheapness of product. It further advises the establishment of mortar factories, where may be procured on demand any desired quantity of ready-made machine mortar of guaranteed quality and without delay. This would save the partial blockade of streets with the apparatus for mortar making now transported from house to house for every new building; it would save the waste of mortar, which happens when an excess has been made which can be used nowhere else; and it would save a great amount of dirt, litter and slop in the street and the yard and the back alley, which now attends every building or repairing job. The scheme has many attractions, and a speedy introduction of the new method is to be hoped for.

Legal Status for the Architectural Profession.

À propos of the Davenport city hall competition, the question is pertinent, Why should the architectural profession seem to be especially singled out for the kind of indignity displayed in the tone and language of the stock "*invitation to architects*," which so generally attends the erection of a new public building? While the known vulgarity of political officeholders explains much, it is noteworthy that, when they come before the legal or medical professions, they take off their hats, as it were, and

pull down their vests, and have a care as to their manners. Doubtless a principal reason is the self-respect which the legal and medical professions displayed long ago, when they acquired a legal status and set up a bar to charlatans and incompetents. This step should have been taken at the same time by the architectural profession ; and until it is taken, and the title of architect is properly confined to those who are qualified for its assumption, the general public will pay slight attention to the distinctions sought to be established between architects, builders, manufacturers, and any and all other persons in the building business.

Competition Applied to Government Buildings.

In regard to architectural competitions THE INLAND ARCHITECT has always denounced the practice as prejudicial in many ways to the public weal, to the interest of architecture as a science and an art, and to the welfare of owners and of architects. Owners who wish the best result for their money are advised not to solicit plans in that way ; and architects who wish to build up a creditable practice and reputation are advised not to waste their time and enthusiasm on competition schemes. At the same time, in relation to the selection of architects for government buildings, where the circumstances are peculiarly favorable to the best possible management of a competition and where the method now in use is nearly if not quite the most extravagant and the most inefficient which could be contrived, THE INLAND ARCHITECT advocates the restricted competition recommended by the American Institute of Architects.

Architects Volunteer Competition Plans.

Here is a tale, not of "two cities," but of every city and town where building is proposed and architects hang out their banners. A church is wanted, the cost to be about $20,000. One of the officers and members is an architect of unquestioned standing and experience in church work. A majority of the committee, including the pastor and an experienced builder, propose to engage this architect to make plans to suit their needs and their resources, and to advise the committee as expert in all architectural matters. But one of the committee objects. He thinks they should send out invitations to architects "to submit bids," as he expresses it, and give the committee their "ideas" about the proposed edifice, and fortifies his advice with the statement that "several architects" have spoken to him and "asked the privilege of submitting sketches." This motion prevails, though the architect member of the church declines positively to take part in any such scramble. Here is a committee which was disposed to employ an architect on the strength of his known character and work, without competition, but was swerved from its purpose at the volunteer solicitation of self-styled architects, who obsequiously begged "the privilege" of making church plans for nothing unless adopted. How the profession humiliates itself !

The Davenport, Iowa, City Hall Competition.

The *Engineering Record* and the *American Architect* have been making merry over the stupid "invitation to architects" which certain officials of Davenport, Iowa, have printed as a bait for city hall plans, the building to cost not over $70,000. The successful architect will be required to guarantee the cost of the building by depositing a certified check for $4,000. Quarter-scale drawings are called for, "complete enough for the committee to understand" ! For all this "three prizes," as the committee calls them, are offered, namely, $200, $150 and $100. The journals above named rightly exclaim at the ignorance of men entrusted with public business, and who conduct it in such a stupid manner.

Medal to R. M. Hunt by the R. I. B. A.

The action of that eminently conservative body, the Royal Institute of British Architects, in recommending the award of its annual gold medal for this year to Mr. Richard M. Hunt, architect, of New York, recalls Galileo's reiteration, "The world does move." In this case it is the old world which wheels into the procession. The incident is no less creditable to the intelligence and liberality of the Royal Institute than to Mr. Hunt. The recipient of this honor has long been prominent in this country, not only as a thoroughly qualified and thorough-going artist and constructor, but also as a public-spirited man, and particularly as a public-spirited architect. While carrying successfully the responsibilities of a large and engrossing practice, he has not been too absorbed in his own affairs to manifest a lively interest in the advancement of the architectural profession in the United States, in which cause he has rendered many valuable services. He has also kept in touch with the profession abroad, and, in particular, he performed a very gracious courtesy when he raised the endowment for the *Prix de Reconnaissance* and presented it to the École des Beaux Arts, Paris, as a grateful testimonial and acknowledgment by American architects of the generous liberality of that school to American architectural students. Mr. Hunt's office, moreover, has been the school where many an architect now in successful practice received his early training. An amiable feature of Mr. Hunt's character is the lively interest he always manifests in the later career of any of his "boys," as he calls them.

The New Chicago Building Ordinance.

A new building ordinance of over twenty-six thousand lines or 120 pages of type matter of ordinary pamphlet size has just been passed by the Chicago city council. Mr. Adler, who was one of the framing committee, has written a letter printed in this issue in which he outlines the general scope of the ordinance. The general amendment by the council referred to by Mr. Adler will probably weaken many of its provisions, but in general the result will be a large improvement upon past methods. We have always held the arbitrary limitation to the height of buildings to be ridiculous from every standpoint and with no real argument for a basis, and if the council have reduced the already limited height the architects who by their approval are largely responsible for such limitation have only themselves to blame. It will certainly bring with it many evils that will be lasting. The ordinance was compiled by the following committee appointed by the Mayor in February, 1892 : Aldermen W. D. Kent, A. O. Sexton, L. B. Dixon, and M. B. Madden ; Joseph Downey, Builders' and Traders' Exchange ; T. A. Bowden, Underwriters' Association ; Louis O'Neill, Commissioner of Buildings ; W. G. Jackson, Real Estate Board ; J. G. Monahan, Building Trades Council ; D. Adler, Illinois Chapter American Institute of Architects ; the latter having done most of the work of compilation besides writing much of the text matter for the consideration of the committee.

DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE.

BY. CHARLES E. ILLSLEY, A.M., C.E., ARCHITECT.

CHAPTER III—ISOMETRIC DRAWING—*Continued.*

ONE isometric axis being vertical, the two others may have four different positions with regard to it, as in Figs. 36, 37, 38 and 39. From these positions the isometric cube results as shown by the dotted lines. The positions in Figs. 36 and 39 may be called *superior* positions, since they show the superior or upper surface of the cube; the other positions are *inferior*, as showing the under side of the cube. The student will find it well to memorize these four positions with their distinctions.

42. The positions of the isometric axis in Figs. 38 and 39 may seem to conflict with Section 32, which states that the isometric axes are at angles of 120° with each other. In these figures the axes are at angles of 60° in one direction and of 300° in the other,

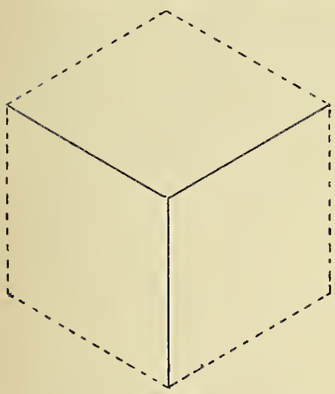


FIG. 36.

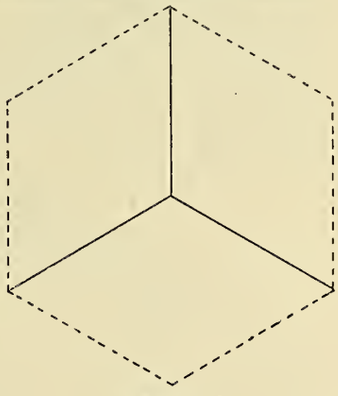


FIG. 37.

measuring the long way around. But, if the axes in Figs. 38 and 39 are prolonged beyond the meeting point, their extensions will make angles of 120° with each other and with the vertical. The sixty-degree angles in Figs. 38 and 39 are, hence, the supplements of the one hundred and twenty-degree angles in Figs. 36 and 37. The angle made by a line oblique to another may always be read

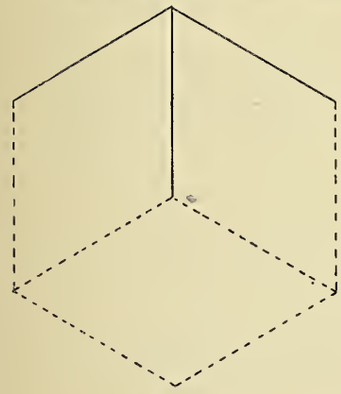


FIG. 38.

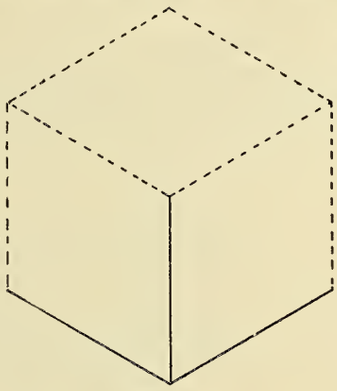


FIG. 39.

in two ways, either as an acute angle, or as an obtuse one, each angle being the supplement of the other.

43. From the foregoing principles result the following

RULES FOR ISOMETRIC DRAWING.

RULE I.—Measure the object to be drawn along its lines of length, breadth and height, i. e., along its three rectangular axes (inclosing a solid angle), as B A, B C, B E, in Fig. 31, or along lines parallel with such axes. Oblique lines as A E in Fig. 31, must be located by two or more rectangular measurements, as B E for the height and A B for distance out, or E F for distance out and A F for height.

This rule applies to all lines of the object not parallel to the rectangular axes represented by B A, B C and B E in Fig. 31. Slant lines cannot be measured directly along their length.

RULE II.—Having measured the object to be drawn per Rule I, apply each measurement to the isometric drawing upon the isometric axis which represents or is parallel with that line of the object along which the measurement was taken.

Thus, if the slant line A E, in Fig. 31, is to be drawn according to measurements from the object, the measured height must be applied along B E or A F, and the measured distance out must be applied along A B or E F. No measurement can be applied in any direction not parallel with B A, B C or B E.

RULE III.—If an object is to be constructed by measurements taken from an isometric drawing, it follows from Rules I and II that all measurements from the drawing must be taken along the isometric axes or parallels therewith. No other measurements are correct.

CHAPTER IV.—PRACTICAL EXAMPLES OF ISOMETRIC DRAWING.

44. The examples which follow are mostly copies of working details made by the author for buildings then in course of erection, and with no thought at the time of their ever serving any

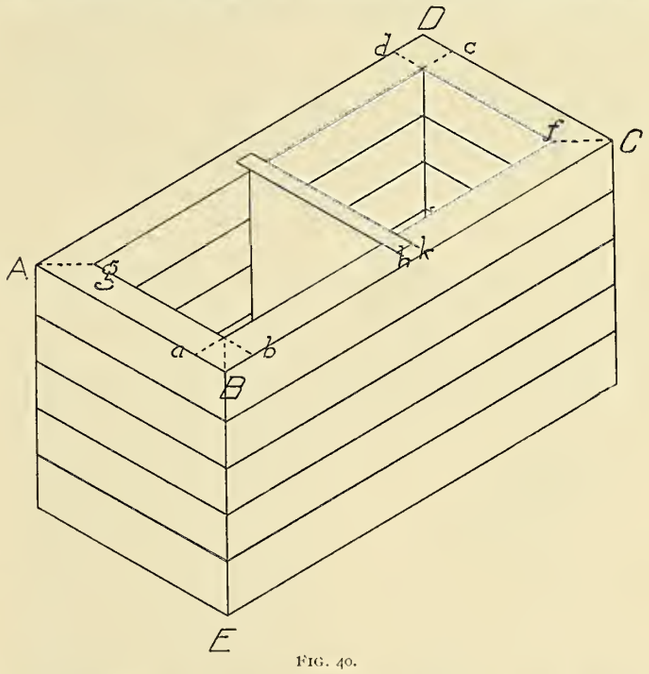


FIG. 40.

other purpose. They illustrate the great vividness and completeness of isometric drawing, particularly for constructive details, for which purpose they serve almost as well as a model. While these isometric details are made to scale, and dimensions can be taken from them as accurately as from plans and elevations, each drawing showing correctly the length, breadth and height as clearly as any ordinary perspective, they are drawn with the greatest facility by the aid of the thirty-degree triangle and without vanishing

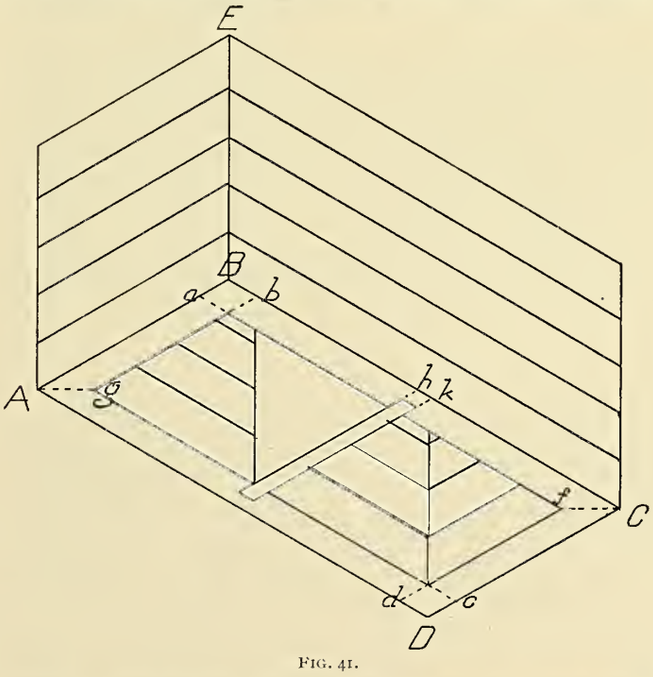


FIG. 41.

points. Hence isometric drawing claims a prominent place among direct methods in architectural perspective.

45. Fig. 40 is an isometric drawing of a tank with two compartments shown in the superior position (Section 41). Fig. 41 shows the same tank in the inferior position. In constructing Fig. 40,

lay off on the three isometric axes B A, B C, B E, the width, length and height of the outside of the tank, and complete the exterior by parallels to the axes as drawn. At B *a* lay off the thickness of the wall B C, and at B *b* lay off the thickness of the wall A B. Through *a* and *b* draw parallels with B C and A B.

At A draw A *g*, at right angles to the vertical B E (if produced). A *g* represents the diagonal or miter line at the joint A. Through

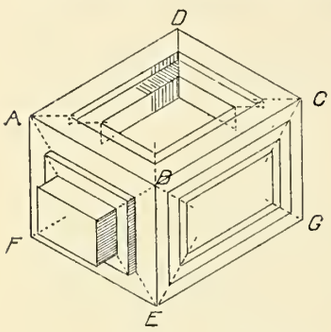


Fig. 42.

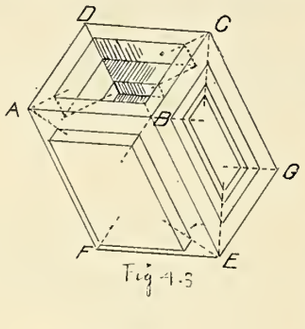


Fig. 43.

the point *g*, where *b g* meets A *g*, draw *g c*, parallel with A D or with B C. At C draw the miter line C *f*, and through *f* where *a f* meets C *f* draw *f d* to meet *g c*. The location of the partition and of the joints will be self evident from the drawing.

46. Referring back to Fig. 31 it will be seen that the diagonals of the upper face A B C D, which correspond to the miter lines at the joints of the top of our tank, are B D, which is a prolongation of B E and A C, at right angles to B E. When the walls of the tank are of uniform thickness, as with Figs. 40 and 41, it will suffice to lay off the thickness once only, as at B *a* or B *b*. At A draw the miter line or diagonal A *g*, and at C draw diagonal C *f*, both at right angles to the direction of B E. Now draw *a f* parallel with B C to meet C *f*, and from the intersection of *a f* with B E produced, draw *b g* parallel with A B. Lines through *g* parallel with A E, and through *f* parallel with C D, complete the interior edges.

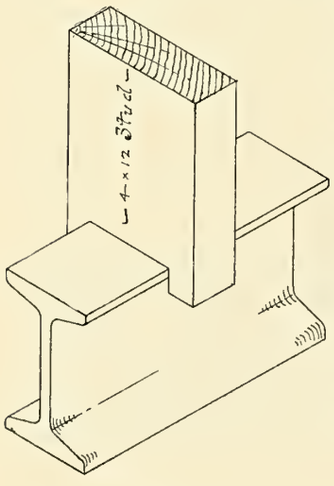


Fig. 44.

At A, E and C, the lines for miter joints, should such occur, in the vertical faces A B E and C B E, would manifestly be at 30° with A B, with B E and with B C respectively, while at B the diagonal for miter joints in the vertical faces makes an angle of 60° with B A, B E and with B C, as may appear from Fig. 31. This is simply saying that the diagonals bisect the angles in the vertical faces, which angles are of 120° at B, while at the corners A, E and C they are of 60° each.

47. Figs. 42 and 43 are examples of the use of miter lines or diagonals where the surfaces are rectangular but not square. In

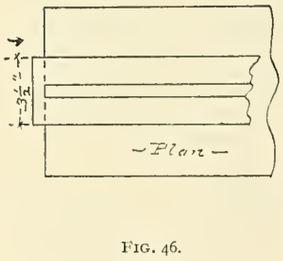


Fig. 46.

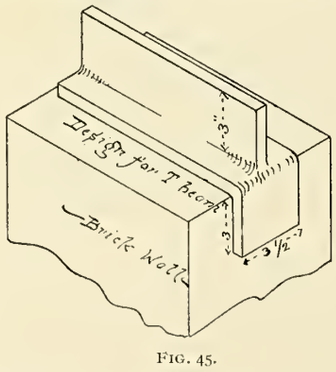


Fig. 45.

Fig. 42 the miter lines for the upper surface are vertical at B and D, and horizontal at A and C, as shown by dotted lines. In the other faces the miter lines at B, F and G make angles of 60° with the vertical, while at A, E and C they are at 30° with the vertical. Hence all the miter lines are drawn directly with the thirty-degree triangle. The upper surface is recessed in steps, the left face has two raised panels, and the right face has a series of parallel lines in the same plane, all showing the use of miter lines stepped down or out, as required.

In Fig. 43 the line A B is horizontal, and B E, instead of being vertical as in Fig. 42, makes an angle of 30° with the vertical. Here the miter lines, as dotted, make angles of 30° with the horizontal at A and C, and of 60° at B and D. In the right face the miter joints are vertical at C and E, and horizontal at B and G. In the left face they make angles of 30° with the horizontal at A and E, and of 60° at B and F.

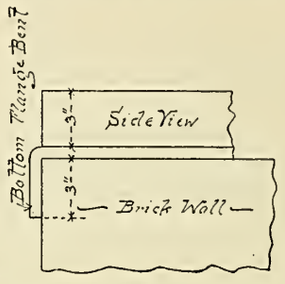


Fig. 47.

It will be observed that in the upper face of Fig. 42 and in the right face of Fig. 43 the miter lines, being vertical at two corners and horizontal at the other two, are at right angles to each other. The same is true of the miter joints in each of the other faces, though the fact is less apparent. For example: in Fig. 43 the miter line at E is at 30°, and at F it is at 60° with the horizontal. If these miter lines be produced till they meet they will form a triangle with the base E F, and, the sum of the angles at E and F being 90°, the other angle will be of 90° also.

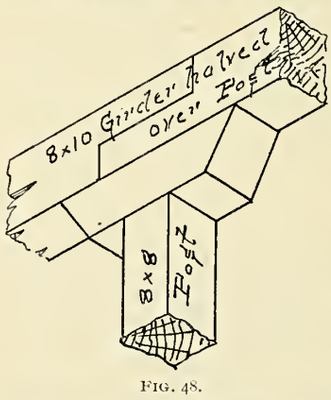


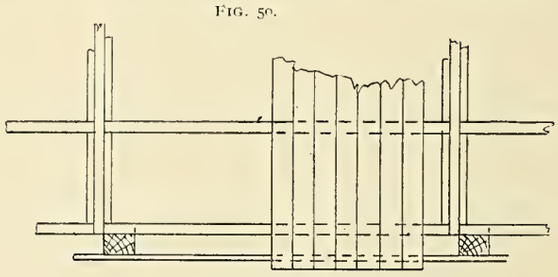
Fig. 48.

The miter line should be used in isometric work both for accuracy and for facility of construction.

48. Fig. 44 is a detail drawing to show how a heavy timber partition rests on a twelve-inch rolled iron I beam, each upright being cut so as to straddle the iron beam, to prevent its slipping off sidewise.

Longitudinally of the beam it is held in place by the bridging (not here shown). Only a fragment of the iron I beam is shown. The vertical line representing the distant edge of the web is

Fig. 50.



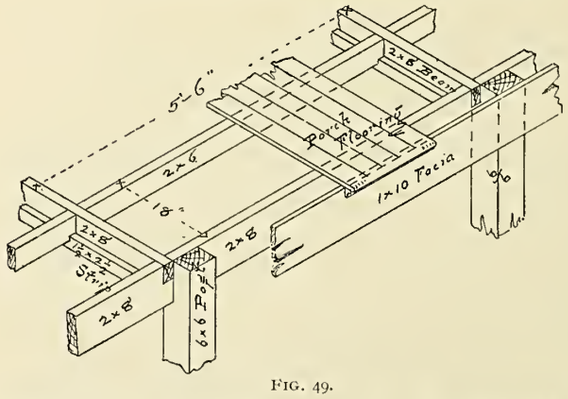


Fig. 49.

located by drawing the joint between web and bottom flange of same length as the flange, then drawing a vertical from its end.

49. Fig. 45 shows at a glance the hooked end of a rolled iron T beam to be shoved through an old brick wall from behind, the front end to project several feet beyond the wall and carry a balcony. Fig. 46 is a plan and Fig. 47 is an elevation of the same.

Fig. 45 is more intelligible than the other two combined, and is quite as easy to construct.

Fig. 48 shows a combination of post, bolster and wooden girder halved over the bolster.

Fig. 49 shows every framing detail for a veranda floor, of which Fig. 50 is the plan. It requires scarcely any more time to draw

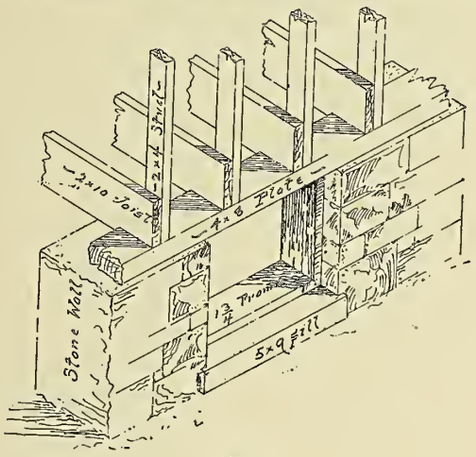


FIG. 51.

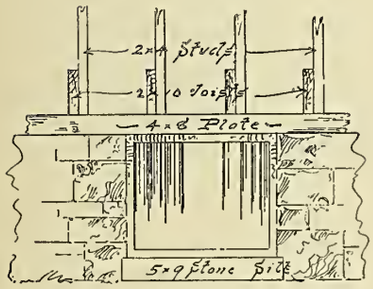


FIG. 52.

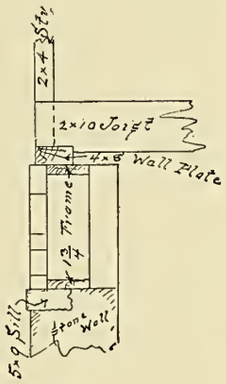


FIG. 53.

Fig. 49 than Fig. 50, yet the latter shows how the front sill is notched upon the posts, the beams halved into the sill and beside the posts, the strip at base of the beams and the joists cut between the beams and notched down on the strip, also facia board and

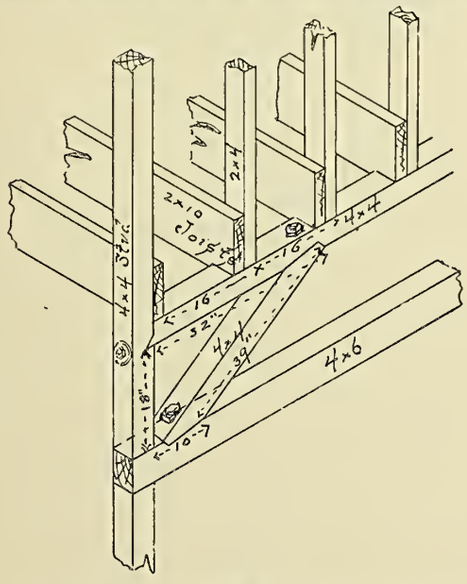


FIG. 54.

flooring, with a vividness and clearness which no combination of plan, elevation and section can approach.

In Fig. 51 we have framing details at a cellar window. By comparing with Figs. 52 and 53, which show the same detail by the usual method of elevations and section, the superiority of the isometric drawing will be manifest.

50. In the following examples we encounter oblique lines. Fig. 54 shows trussing, to carry an upper floor over a door opening in the story below. Locate the oblique brace by measuring its rise, eighteen inches and its distances out, namely, ten inches below and thirty-two inches above. In taking off dimensions from this

FIG. 56.

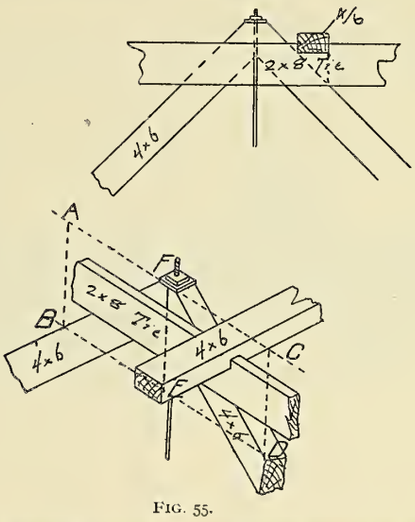


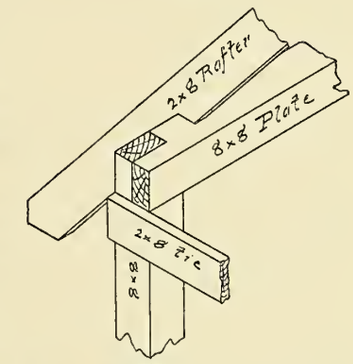
FIG. 55.

drawing the length of the slanting brace cannot be measured by scale; hence it should be figured, as shown.

Fig. 55 is the isometric drawing, and Fig. 56 is the elevation of the top of a series of trusses carrying purlins to support a steep roof. The slant lines for the truss are obtained by measuring their span at any level, as B D, and the distance A B of such level below the apex of the truss. Draw the vertical F E through the apex of the truss and set off the half span at B E and D E.

Fig. 57 shows the support of a purlin halved on a corner post with transverse tie, and a rafter notched on the purlin. Fig. 58 shows lateral bracing of the same post at a lower level. The braces are drawn by taking their span at any convenient level, as B D, and the distance A B of this level below the top of the post. The braces being narrower than the upright post, the center E of the span B D fails to coincide with the middle F of the left face of the post. The span may be considered to be measured in a plane A B C D, standing back one inch from the face of the post.

FIG. 57.



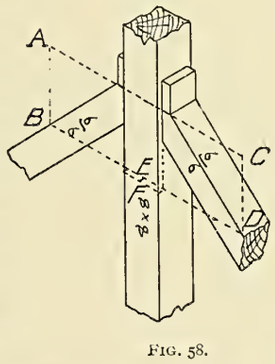


FIG. 58.

(To be continued.)

THE *Wiener Bauindustrie-Zeitung* states that the German national building at the World's Fair will take the form of a mediæval castle, surrounded with fosse and palisades and guarded by a drawbridge and lofty stone portal. In its vestibule, corridors and rooms will be an exhibit of weapons from the great establishment *Zschille*, in *Grossenheim*. Some sixty workmen in full costume will give an example of the practical operations of the manufacture of modern weapons in this establishment. The castle walls will be decorated with pieces of armor, and there will be displayed complete models of the ancient buildings, ramparts, etc., from the Roman-Germanic museum in Mayence. In the chapel, which will be completely finished in the style of the period, will be a display of prehistoric relics. Adjoining the castle and apparently under its protecting ægis will gather the motley buildings of a German village, including a provincial "Rath-haus" or council chamber, filled with curiosities, also a village market, and a statue of "Roland." Finished models of various German manufactures to a scale of one-twentieth will be exposed for sale. The official quarters of the German commission will be in the "Nuremburg style," from designs by architect Hayden.

MAN AND HIS ART.

AN ARCHITECTURAL POINT OF VIEW—WITH SKETCHES.

BY IRVING K. POND, ARCHITECT.

A GREAT deal has been written about art. One hardly will question the truth of this statement. Considering that art is pretty much—indeed, mostly—a matter of taste, concerning which, as they say, there can be no disputation, a great deal has been written about it. But it hardly can have been artistic taste that the phrase tinker had in mind when he hammered out "*de gustibus non est disputandum.*" He had seen the old lady kiss her cow, and it was borne in upon him that there is no accounting for tastes, and I have to grant there is no disputing about personal likes and dislikes, the sum of which goes to make up what we call taste. But surely in the broad field of art there is room for free and frank discussion. There is as yet lack of entire harmony between the realist on the one hand and the idealist on the other. There is the unsolved problem as to the province of art, whether it shall amuse, entertain, or instruct; and this suggests the query as to whether love of color ever should be made the controlling sentiment of a painting, or whether some moral or concrete literary theme should dominate.

Or again, in architecture there is the question which ever is appealing to the creative mind, as to the real artistic value of a production along strictly classical lines, of a work which is intended to express the expanding spirit of these restless times of material development; and the innocent looking conundrum, but to propose which is like flaunting a red flag before the critics—as to the good taste of constructed ornament as opposed to ornamented construction. These and kindred matters would seem to indicate that even so far as this age is concerned the doors of discussion cannot yet be closed.

As I say, a great deal has been written about art, and I may say with equal truth that a great deal is yet to be written. Just as long as man continues to manufacture history or to utter prophecy, just so long will there be reason and necessity for the discussion of art, because art is directly and indissolubly involved in man's personality. This is the phase I wish to present at this time and which I wish to illustrate by special reference to that branch of art known as architecture.

I shall not care to go deeply into the philosophy of my subject. Some things I shall take for granted, some things I shall try to explain; but for the most part I shall content myself with presenting certain matters which I know to be fact and certain other matters which many will believe to be fancy.

Art is the adequate expression of the idea of beauty. The power to produce art is about the only thing which distinguishes man from the *rest* of the brute creation. Animals have an appreciation of the *thing* beauty, if a *thing*, so to speak, so eminently spiritual can be called *thing*. At least animals enjoy the elements of beauty, repose, swift and graceful motion—sweet notes as of the song birds, soft or brilliant colors as of fur and feathers. But animals, however they may revel in the *thing* beauty, do not demonstrate to us that they have any power to take an abstract or intellectual idea and make it concrete. That power is bequeathed to man, as his special portion. Art is the expression of the idea of beauty—the realization of the ideal—the *artist* attempts this. Does not this question sometimes suggest itself: How much better than the brute is he who neither expresses nor appreciates the ideal? Man has been supplied very bountifully with ideas and sentiments and with means for expressing them. The bird sings beautifully but cannot compose a *song*. The horse moves swiftly and gracefully over the sward, but cannot make a *book*. The lilies are clothed in glory but they cannot keep house. It is man alone who seems to be endowed with unnumbered sentiments and an almost limitless capacity for expressing them.

Sound, words, motion, outline, form, mass, color, are all elements of that subtle medium through which the ideal is expressed or communicated. If its expression be in metrical feet and melodious sound we have music; if in rhythmic feet and form in graceful motion, the dance; if in metrical feet and musical words, poetry; if in harmonious color and balanced composition we have painting; if in harmonious outline and graceful form, we have sculpture; and if in metrical feet, harmonious color, balanced composition or symmetrical form, we have architecture. It will be seen, then, that architecture contains elements common in greater or less measure to all the other branches and therefore I feel justified in using it to illustrate the close relationship of art to man's personal nature.

There is a realm pertaining to architecture upon which the other branches of art hardly even border. That is the practical, which includes cooking ranges, plumbing, leaky or unleaky roofs, smoky or unsmoky flues, damp or dry cellars, and a thousand and one items of a more or less practical or unpractical nature. This realm I have no notion to invade now. There is no conflict nor need ever be between this and the realm of ideal beauty, and we need no more take it into account in an art discussion than we would study the anatomy of a man's body when observing him under the spell of the sentiments which animate him in the presence of mountain or river or sea or forest, or of a statue, or a woman. What we care to know about him is that he has a cultivated mind naturally free from prejudice and capable of receiving correct impressions. We care to know this for there is no other way by which to judge of the true value of a work of art than by the impression it makes on such a mind as this.

On his impressionable side man in general is a peculiar and illogical animal. He rarely is capable of receiving two impressions and of treating each with equal or any justice, at one and the same time. He likes what he is in a mood for and condemns the rest, especially does he condemn what he does not understand.

By reason of this want of capacity in the sensitized film of man's mental photographic apparatus to receive, record and develop two distinct simultaneous impressions, art today, in general, reaches its highest effectiveness when it presents but one theme for inspection, and harmonizes and bends all accessories to the enforcement and elucidation of that theme or central idea. Thus, though a great naval battle might be fought on a clear day and in calm water, the painter who was not treating the subject historically but who wished to give the deepest impression of a great conflict would not paint a clear sky and limpid water but would paint the natural elements at war, would give his flame-spitting battling ships a background of rolling, lurid smoke and wind-swept, tumbling cloud, and a foreground of seething, boiling, hungry billows.

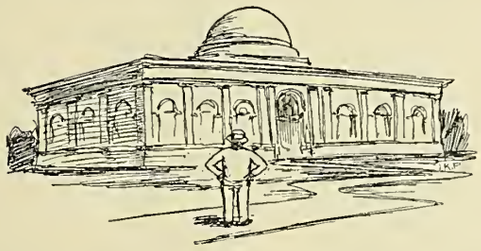
The effectiveness of a single theme explains the power which is held by that most subtle quality of art, simplicity. *Simplicity* is *not* singleness of theme, but is the clarified condition which obtains when two or more distinct themes have been so harmonized and combined as to give the impression of unity to the composition; or, too, when many varying sentiments have been woven about a central theme imparting richness and variety without detracting from, but rather augmenting the beauty of the central thought. But even if a single sentiment is so expressed in a picture as to command in the observer a change to a sympathetic mood, that mood cannot be held for long, because the eye, the imagination, requires new food, and turns, after a time, with avidity to some new theme. A really fine work of art will have power to draw consideration to itself again, but the most perfect masterpiece the world has ever known cannot keep its worshiper on bended knees before it at all times. A mind which considers that it has been sufficiently impressed or even satiated by a picture or poem, a statue or a piece of music can turn to another work in the same class or to the product of an entirely different branch of art and find relief or renewed inspiration. In this architecture is at a disadvantage with the other forms of art, for turn where it will the sensitive eye cannot escape the features of the dwelling, or of the buildings along the streets, and if in these it does not meet the response which it is seeking, the effect on the mind is that of disappointment and unrest, and shall we say that character is not modified by the attitude of the mind? Therefore, in architecture it is not singleness of the theme but the simplicity of the highest art that is required. Architecture, and music in certain forms of its composition, are the only branches in which multiplicity or complication of theme is not only advantageous but almost absolutely necessary. This parallelism existing between these two forms of art expression makes clear and forcible the oft-heard and ill-understood maxim, "Architecture is frozen music." Some architectural productions may be the expression of a theme as single as that which underlies the air of "Home, Sweet Home," but such singleness must be limited to works of comparative unimportance. As for living in one of a row of houses repeating indefinitely such a theme—one would sigh rather for the confines of a well-designed jail. And as for sitting out an hour of "Home, Sweet Home," even with variations, who would not yearn instead for the cheerfulness of a well-conducted funeral service?

As it takes a cultivated taste to appreciate the beauties of a symphonic composition, so it does to comprehend the spirit of a really subtle architectural design, though the spirit of architecture is nearer to man than many a man would realize.

Now why is this spirit near to man and why *should* it appeal to him directly for sympathy? It is because the lines, forms, attitudes, movements, so to speak, by which certain sentiments in a man's mind find expression in his body, are the same as those which echo the same sentiments in a work of architecture. I will illustrate broadly, by presenting two architectural forms which give sufficient contrast.

Before each of these objects is the figure of a man, who may be supposed to be gazing upon it, in sympathetic mood. Before the taller object the man's attitude is erect, his face is lifted, his arms hang perpendicularly, and at his finger tip is a feeling as if he were about to raise his hands. The man before the low, broad structure stands planted solidly on his feet, his hands resting on his hips, his face squarely in front. I believe the least imaginative will agree that the spirit of harmony now existing in these sketches would be destroyed by reversing the situation of these men. The lines of the figure before the broad structure are not in sympathy with the perpendicular tendency of the spires. That position before the taller structure would indicate a critical or hypercritical frame of mind and would suggest that the man considers himself "bigger" than the object on which he gazes. (The architect might be pardoned, perhaps, for assuming



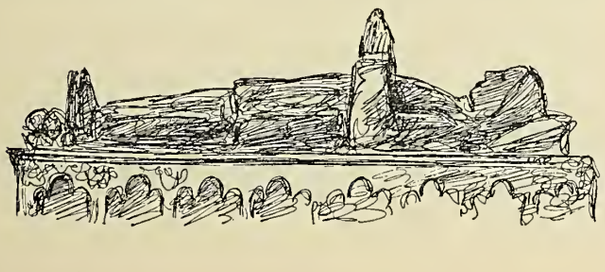


that attitude before one of his own creations, but he never could pardon that bearing in another.)

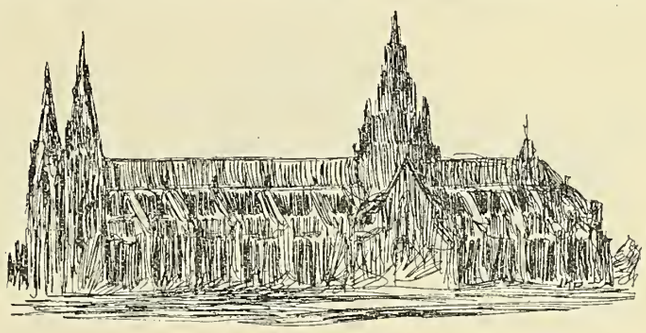
These two architectural compositions are so opposed in feeling that we may find interest in analyzing the sentiments which underlie them. Broadly speaking, they are the sentiments of aspiration and repose, though the dome (in B) introduces another theme.

How is the sentiment of *repose* expressed? When a *man* seeks repose—full, deep, unrestrained repose, he throws himself upon the ground at length, with perhaps his head pillowed upon one arm, the other arm stretched out carelessly. Thus disposed he can drop off into a healthful sleep, or think intently, drift away into nirvana, or arouse himself immediately to intense activity. It is this low horizontal disposition of lines and masses, joined by easy graceful curves and details, which produces this *same feeling* in an architectural composition.

Repose must underlie any architectural work which pretends to dignity or grace, and, therefore, it cannot be utterly inconsistent with aspiration. Take, for instance, this position of the body,



which indicates a repose from which the spirit has no apprehension of being aroused by earthly cares and anxieties. With its long lines and pointed arch formed by arms and hands, it symbolizes "saintly repose" and is made to represent that in many rich gothic monuments. In fact it exhales so decidedly "an odor of sanctity" that we may look for it in certain churches, and we look not in vain, for we find the sentiment in the



beautiful pointed cathedrals of the middle ages. Certainly this structure breathes the spirit of repose, as it does of aspiration, as we shall see later on. These long low lines induce to the feeling of repose in man because they are not at all prominent in the lines of rest in any other animal. The bird or horse or elephant or bat can rest, but not repose as man feels it. In many creatures we observe a *poise*, which is not just repose, but which serves to impart a feeling of rest. This *poise* is the one thing which keeps some restless, nervous architectural compositions together and gives them character in spite of their flighty propensities. You will appreciate pretty fully what poise is if you ever have seen a stork standing on one leg "like patience in a mill stream waiting for fish."

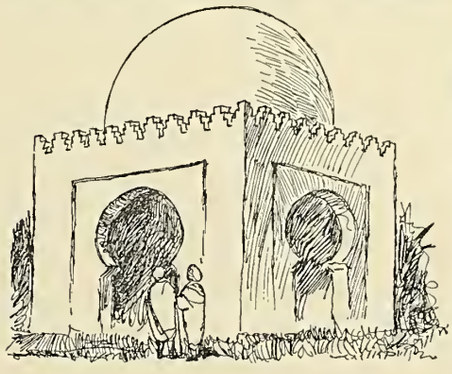
Leaving now the sentiment of repose, let us see what underlies the *spire* and the *dome*. A dome enshrines the brain of every creature which is capable of expressing feeling or sentiment. A dome crowns the bodily tabernacle of every upright,—as this is a matter of esthetics, rather than ethics,—every physiologically upright man. Therefore the sentiment of the dome is serious, and primarily it is of completion. The dome then comes into direct opposition to the spire, which means aspire, the lines of which breathe aspiration and symbolize an eternal hopeful upward reaching.

The feeling of the spire is optimistic, that of the dome, by itself, when not absolutely pessimistic, is at least non-optimistic. The feeling of the hemispherical dome is pessimistic. No matter from what point in the base one begins to climb he comes at last without a change in the law of his progression to a point in the same plane from which he started. He has effected a change of base, but has he reached a higher plane? If he were to complete the whole circuit he would trace a path like this:



He would have done the same if he had contented himself merely with encircling the dome without leaving the plane of the base. He has marked out a zero, he has arrived literally at nothing. The symbol for nothing came from the orient, where the dome symbolizes

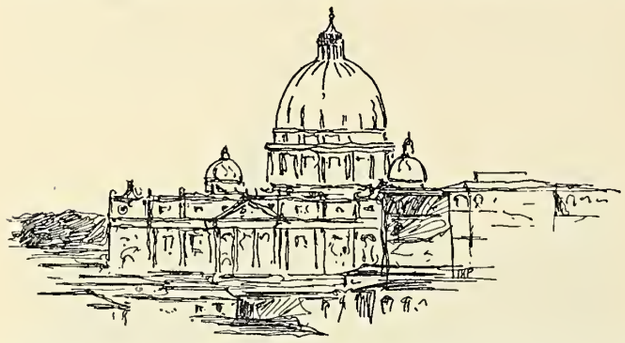




death, and where its chief function is to crown the tombs of the illustrous dead—"All this greatness come to nothing"—that is its sentiment. The whole race of orientals breathes that sentiment. Here is a man and here his tomb.

Christianity came and changed the idea of death. It did not change the sentiment of the dome; that still meant completion so far as this life was concerned, but it added the idea that this life

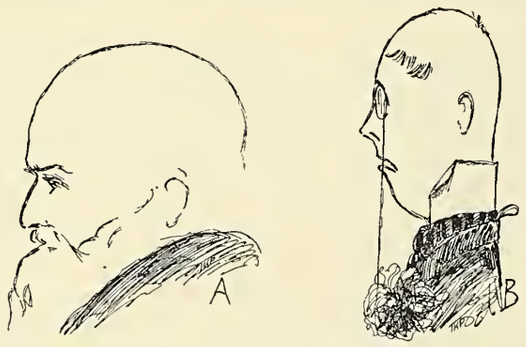
was the stepping stone to a higher life, that this life when completed would burst forth into a bud of beauty. Christianity found a symbol for this, and this is the sentiment of the dome of St. Peter's, the greatest of Christian churches. One may climb from



the base of St. Peter's dome not to return foiled, for before one has passed the zenith he comes upon the beautiful lantern which is crowned with an aspiring vault.

In spite of the intense beauty of some of the great gothic cathedrals, it seems to me less in harmony with the Christian spirit of today than is the sentiment of "Peter's dome," which resting on the facts of commonplace, every-day life, rounding them out in the beauty of harmonious completion, bursts forth at last into a bud of aspiration, and pierces the vault of the heavens with the sign of the conqueror.

The sentiment of completion sometimes is modified in the dome by the abundant use of detail, especially when the dome is dwarfed and made *a* feature rather than *the* feature. The capabilities of the dome for expressing sentiment may be studied well in



the outlines of the human head. From this (A), which suggests a ripe old age, to this (B), upon which the fructifying "ages might fall like rain" with never a result beyond imbecility. It hardly is fair, though, to call this a dome. An Irishman would call it a "dommed" head and probably would "hit it."

The sentiment of aspiration in the building as in the spire, and in this as in the body, finds expression in the perpendicular tendency of the lines, the upward stretching of the hands, the "upward glancing of the eye"—but in its fullest intensity should not lose sight of earth.

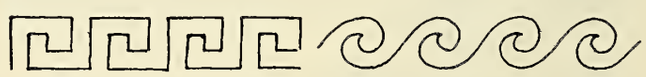
How this soaring tendency was restrained in the mediæval churches which remain to us has been suggested already in a sketch. Europe is strewn with the wrecks of churches which in their ambitions toward high aspirations forgot to rest firmly on earth, and, losing both head and footing, fell as men and churches will.

Another powerful sentiment is that of dignity or stately grace, which finds expression in an architectural composition much as it does in the attitudes and manners of men. The colonnades of the great temples of Egypt and Greece (and later in Norman churches) are symbolic of the procession of robed priests moving slowly in a long file with measured tread and monotonous chant, to the worship of a god or to the burial of a hero. Man never has expressed this sentiment of high dignity better than by the slow moving processional, and architecture never has breathed the same feeling more potently than in the splendid solemn monotony of the colonnade.

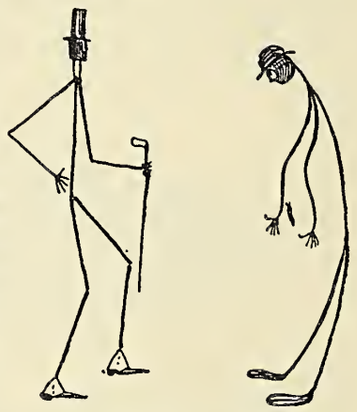
When the units of the composition are dwarfed and arranged in ranks (as in moving troops), we still may be impressed with a certain feeling of dignity, but the stateliness is gone. When the units are of varying sizes and do not follow upon one another with measured tread and at equal intervals (as in a surging crowd), we may have the picturesque, if the units in themselves are interesting, or the absolutely wearying and sickening, if the units are commonplace. And it is precisely so in architecture. And, too, in man and his art a certain formal academic (dancing school or deportment college) dignity is not difficult to express; but in architecture the brilliantly picturesque, which shall appeal to or command a change in any or all moods, feed imagination and inspire thought, is always the most subtle and evasive of sentiments and is a feeling well nigh impossible of expression.

Thus, and at the risk of solving the mystery and making art commonplace, I have sought to suggest, rather definitely, how nobler and deeper sentiments find expression in *mass* treated characteristically in its form and outline. I shall suggest only sketchily how the lighter and more tender sentiments are conveyed through surface lines, form and color. In fact I cannot treat of color at all; it would need a paper by itself to show what sentiments and how sentiments are breathed in color; how color may enhance the value of form or how destroy it utterly. The subject is too broad and too subtle for discussion here, but upon some of the possibilities of line I am inclined to touch.

It will not be difficult to understand that a composition of rigid straight lines, unconnected by curves or wavy lines, breathes a very different sentiment from a composition of curved lines, flowing



gracefully into one another. Here are two frets used generally in ornamentation based on the same parent idea, the wave, but certainly expressing the different character assumed at different times by the dashing or flowing waters. Two human figures may be suggested—one by straight lines, the other by curves which will indicate the yielding and gracious sentiment of the curves as compared with the angular and self-sufficient straight lines. Notice how one figure bends, as it were, in apology before the more "perfect" creature.



The sentiment of elegance touches mass and surface, and is expressed in an architectural work much as it is in the life of man. Elegance is the correct and studied proportion of the parts or acts, great or small. Without due proportion and balance there is no elegance. Elegance does not demand great riches or great richness of detail either in a man or in a work of art. When elegance loses vitality and spontaneity it degenerates into the merely academic and becomes dead art, on the gravestone of which we may inscribe with truth, "*not lost, but gone behind.*"

The deepest and tenderest of all human sentiments, love, breathes in the solid and surface, in the mass and detail of every worthy architectural composition. It is subtle and ineffably shy, but it need not be hidden from the comprehension of one who knows its quality and the fragrance it sheds along other paths of life. Men have given their lives *to* art; men have given their lives *for* art, even, but that is not required often. The lot of most lovers is to live to show by the utmost gentleness and tenderness and kindness in the least of their acts as well as in the greatest, what is the character of the sentiment which animates them. The lover kisses away the tear of grief from the upturned face, does not dash it away rudely. The lover is not content to greet his queen with a stately bow, he presses passionately to his lips the little flower she lets fall.

"He prayeth best who loveth best all things, both great and small," and he designs best and best executes his designs, who loves the ideal he has in his mind, who loves equally the tiniest leaf his pencil point helps him to call into existence, who loves the pencil point which aids him in his work. Therefore, by the spirit of the mass, of the surface, of the veriest details, we may know whether the artist loved his work, and if he did and we are not benumbed, the sentiment will touch us.

In this paper I have sought to create or to strengthen the impression that art (and architecture as a branch of art) is not a thing apart from man, a thing upon which man can look and be moved only as he sees what he himself brings; only as he sees the shadow that he himself casts on the surface. That is too superficial. Art is deeper than that. Art does more than "to hold, as 'twere, the mirror up to nature." It holds the glass to the spirit as well. As idealists we may love nature because we seem to recognize a spirit of beauty, working in and through its external forms. As realists we may love nature simply for the facts it furnishes us. But we cannot have the same personal feeling toward nature which we have toward history and literature and art. Nature came from outside of us. Art comes from within. We can know nothing about the personality of the Creator and therefore we can look on nature with no sentiment of personal responsibility; whether it is good or bad, beautiful or ugly, it is nothing to us personally. It had to be just as it is. But with art it is different. It is part of us, we called it into being, we are responsible for the life and character of the men through whom it rises, and we recognize in it a renaissance of our own feelings, aspirations, sentiments. That is why art will be as long as time, and why man cannot get away from it till he dies. That is why, I say, art is indissolubly bound up in man's nature and is dependent for its purity and ideal beauty on man's personal character and social life.

CHICAGO BUILDING ORDINANCE REVISION.

THE following communication from Architect Dankmar Adler, of the committee of revision of the building ordinance of the city of Chicago, appointed for this purpose a year ago, indicates something of what was sought to be accomplished by the committee toward the improvement of the building laws of Chicago.

CHICAGO, March 18, 1893.

Editor of the Inland Architect:

DEAR SIR,—When I answered in the affirmative your request to contribute to your columns an editorial upon the new building ordinance, it was upon the supposition that I should receive within a reasonable time, as had been promised me by the Chairman of the committee which formulated the ordinance, a set of proof slips of the ordinance as passed. As these proofs have not been delivered to me, I have no information as to the provisions of the ordinance other than what has been printed in the columns of the daily papers. This has been confined chiefly to the action of the Common Council changing the limit of height of buildings from 160 to 130 feet and to some vague statements as to changes in the clauses relating to arbitration and to the fire limits from the wording of the ordinance as left by the committee. Therefore, I am not in possession of data sufficient to form the basis of the article you desire.

I shall take the liberty, however, of substituting for the promised editorial a few words upon the work of the committee which formulated the ordinance.

The committee was made up of four aldermen, of whom one was an architect, and of an ex-officio representative of each of the following bodies, to-wit: The Real Estate Board, the Fire Underwriters, the Builders' & Traders' Exchange, Building and Trades Exchange, and the Illinois Chapter of the American Institute of Architects.

The members of the committee labored earnestly from the beginning and were evidently desirous of contributing their best efforts to the work entrusted to them.

The general trend of the ordinance, as recommended by the committee, was toward a raising of the standard of building throughout the City of Chicago.

There was a material expansion of the fire limits. There were material restrictions in the extent to which enlargement of frame buildings would be permitted. The dimensions of frame buildings outside of the fire limits were regulated and very materially restricted.

Provision was made for compelling inspectors of buildings to submit to examination as regards their qualifications before they would be permitted to serve.

Provisions were made for a deputy commissioner of buildings who must be a graduate of an engineering school.

Great discretionary powers were given the Commissioner of Buildings as regards stopping work upon buildings which were being improperly constructed, as also with regard to tearing down parts of buildings in a dangerous condition. On the other hand, his powers as regards his discretionary authority, as regards matters not implying immediate danger to life and limb, are limited by the right of parties claiming themselves injured by such decisions to courts of appeal or arbitration; the regulations and establishment of rules in connection with introduction of new materials and new processes being also left to the control of boards of arbitration.

The maximum strains upon the various materials used in building were fixed, and where, with different methods of use or application, different degrees of strength were obtained in the use of the same material, due allowance was made for these differences.

The ordinance also took up quite elaborately the subject of stairs in buildings of various kinds, regulating their numbers, their widths and materials of construction.

An important provision of the ordinance as it left the committee was the regulation of the extent to which contractors were to be permitted hereafter to make use of streets and to obstruct streets; but as regards this and a great many other items, I cannot say what did and what did not pass the Common Council until I see the ordinance, as passed, in print.

The paragraphs relating to the ordinance which I have seen in the daily papers lead me to fear that many of its most valuable provisions were sacrificed in the Common Council, so that all comment should be reserved until an authentic copy of the ordinance can be obtained. Yours, DANKMAR ADLER.

ASSOCIATION NOTES.

THE SKETCH CLUB OF NEW YORK.

Mr. George B. Post gave a very interesting talk before the club at its monthly meeting, Saturday, March 4. Mr. Post first referred to his early professional life—telling a number of stories, then related his experience in connection with the World's Fair buildings in Chicago, and closed with words of advice to the members of the club. At this meeting Mr. Henry P. Kirby awarded the Ackerman prize of a set of instruments to H. H. Braun, for the competition in pen-and-ink rendering of a carved panel. Emil Ginsburger received second mention. In the Miller prize competition for a country house, the first prize was awarded J. Henry Cook, second to L. J. Bross. Mr. S. F. Miller read a criticism by George Martin Huss and made remarks of his own. Mr. Miller intends to build the prize design. The meeting passed resolutions on the subject of amalgamating with the Architectural League under condition of retaining certain privileges of self-government.

THE CHICAGO ARCHITECTURAL SKETCH CLUB.

The syllabus issued by the club for the year 1893, and subjects for competition, are as follows:

SYLLABUS.

Jan.	9.	Business Meeting.
"	23.	Castles of Louis II of Bavaria, Illustrated.—A. R. SCHLESINGER.
Feb.	6.	Entertainment.
"	20.	A Draftsman's Experience Abroad.—HARRY BACON.
Mar.	6.	Club Competition—subject to be given; sketches to be rendered and criticised during meeting.
"	20.	A Few Reflections on Design.—C. B. ATWOOD.
Apr.	3.	Business Meeting
"	17.	Entertainment.
May	8.	Business Meeting.
"	15.	Open Date.
"	29.	Open Date.
June	12.	Subject to be Announced.—JULIUS HARDER.
Aug.	21.	Open Date.
Sept.	4.	Entertainment.
"	18.	Subject to be Announced.—T. H. MULLAY.
Oct.	2.	Subject to be Announced.—T. O. FRAENKEL.
"	16.	The California Mission Buildings.—A. G. BROWN.
"	30.	Open Date.
Nov.	13.	Annual Meeting. Election of Officers.
"	27.	Eighth Annual Banquet.

SUBJECTS FOR COMPETITION.

Feb.	20.	Design for a Monumental Mantel for the library of a wealthy club. Drawing to show end of room and ceiling, rendering optional.
Apr.	7.	Design for a little Church to be built by the residents of a seaside summer resort. To be rendered in pen and ink.
June	12.	Design for the Main Entrance to an office building. To be rendered in pen and ink.
Oct.	2.	Design for a Water Approach or boat landing to an estate bordering on a lake. To be rendered in water-color or wash drawing.

1. Drawings to be mounted on bristol board, 21 by 28 inches, and delivered at the club rooms, sealed and addressed to the secretary. *Nom de plume* to accompany each design.

2. Seniors and Juniors to enter into competition without distinction. Juniors to be classified from their respective places.

The subject for the "Robert Clark Testimonial" Competition will be announced later.

For particulars regarding water-color and drawing classes, see secretary.

Alternate Monday evenings are informal club nights.

AMERICAN INSTITUTE OF ARCHITECTS.

The Secretary, Alfred Stone, of the American Institute of Architects, has issued the following circular letter and copy of the bill for the reorganization of the office of supervising architect:

"PROVIDENCE, R. I., March 6, 1893.

"For the information of members of the American Institute of Architects and of architects throughout the country, I have caused the act authorizing the Secretary of the Treasury to obtain plans and specifications for public buildings, which was approved February 20, 1893, to be printed, and I send a copy of the same to you

with this circular, hoping that you will use your influence to assist in bringing about an application of the law in connection with the designing of the first building of importance which may be erected under the direction of Hon. John G. Carlisle, the new Secretary of the Treasury.

"The officers of the American Institute of Architects will take an early opportunity to promote the objects of the bill; and would be glad to receive from any member any information which he may have of the probability of the erection of any government building, plans for which have not already been made.

"It is hoped to have the first competition put upon such a basis that it will serve as a precedent for future competitions, and that it will embrace the following conditions, to wit: a full and comprehensive statement of the requirements of the building and an accurate topographical map of its location; a definite statement of the number of drawings required and the manner in which they shall be rendered, making the number of drawings as small as possible and the rendering as simple as may be; a definite time for the competition to close by setting a day and hour, beyond which no drawings can be delivered at the office of the express company transporting said drawings, if they are to be considered, and requiring that a duplicate receipt from the express company shall be sent to the Secretary of the Treasury, or his representative, stating the hour at which the drawings were received for transportation; that a jury of award of not less than three architects shall be selected and named in the terms of the competition, one of whom shall be the supervising architect, and the others shall be selected from practicing or retired architects, who do not propose to compete in any way or to be interested in a business way, with any of the competitors.

"It is believed that if the general provisions herein enumerated be fully and plainly set forth and faithfully carried out, that most of the best architects of the country will gladly participate in some one of the competitions which it is hoped will result from the power placed in the hands of the Secretary of the Treasury by this bill.

"A debt of gratitude is due to the past supervising architects, Messrs. William A. Potter, James G. Hill, and William Windrim, Fellows of the A. I. A., for the active missionary work which they have done and which has made it possible to obtain this enactment, and to the present incumbent of the office, Mr. W. J. Edbrooke, F. A. I. A., for the favorable attitude which he took in advising President Harrison to sign the bill.

"Alfred Stone, Secretary."

"BILL TO SECURE DESIGNS FOR U. S. GOVERNMENT BUILDINGS.

"[Public—No. 77.]

"An act authorizing the Secretary of the Treasury to obtain plans and specifications for public buildings to be erected under the supervision of the Treasury Department, and providing for local supervision of the construction of the same.

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the Secretary of the Treasury be, and he is hereby, authorized in his discretion to obtain plans, drawings, and specifications for the erection of public buildings for the United States, authorized by Congress to be erected under the supervision and direction of the Secretary of the Treasury and the local supervision of the construction thereof by competition among architects under such conditions as he may prescribe and to make payment for the services of the architect whose plan may be selected out of the appropriations for the respective buildings: *Provided*, That not less than five architects shall be invited by the said Secretary to compete for the furnishing of such plans and specifications and the supervision of such construction: *And provided further*, That the general supervision of the work shall continue in the office of the Supervising Architect of the Treasury Department, the Supervising Architect to be the representative of the government in all matters connected with the erection and completion of such buildings, the receipt of proposals, the award of contracts therefor and the disbursement of moneys thereunder, and perform all the duties that now pertain to his office, except the preparation of drawings and specifications for such buildings and the local supervision of the construction thereof, the said drawings and specifications however, to be subject at all times to modification and change relating to plan or arrangement of building and selection of material therefor as may be directed by the Secretary of the Treasury.

"Approved, February 20, 1893."

THE KANSAS CITY CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS

Began a new departure at its meeting March 6, which it expects to arouse unusual interest in its meetings among the members, while outsiders will also have attention attracted. This is the thorough discussion of practical and popular subjects. At the March meeting "The Heating and Ventilating Apparatus of the New County Jail" was the subject, introduced by a paper by Architect Adrian Van Brunt. The system in use at the jail is the two-fan or Plenum system and is entirely new in Kansas City. At the next meeting "The Parks and Boulevards of Kansas City" will be the subject of discussion.

NEW PUBLICATIONS.

PRACTICAL PAPERHANGING: A handbook on decoration in paper and other materials, with practical instructions on hanging them, by Arthur Seymour Jennings, editor in chief of *Painting and Decorating*, formerly associate editor of *Scientific American* and of the *Builder and Decorator*. New York, William T. Comstock, 1892. Price, $2, sent by mail free of postage, to any part of the world.

This is a large octavo of 116 pages, 7 by 10, printed in large-faced, readable type on good paper, and freely illustrated with line and half-tone engravings. It is attractively bound in a sort of terra cotta board cover, and is an unusually inviting book without and within. There are nine chapters, which treat of the paperhanger's tools, of the different kinds of wall hangings, the *modus operandi* of paperhanging on walls and ceilings, of dadoes, friezes and borders, of miscellaneous hangings, as burlaps, lincrusta, lignomur, anaglypta, silk, tapestry, cretonne, etc., and various specialties. There is also a very readable and sensible discussion of the wallpaper dealer's situation, methods and prospects. The author, Mr. Arthur Seymour Jennings, is well known to many as the editor of *Painting and Decorating*, a bright monthly journal published in Philadelphia. He was formerly associate editor of the *Scientific American* and of the *Builder and Decorator*.

FREEHAND LETTERING FOR WORKING DRAWINGS: By Charles Benjamin Wing, C. E., Professor of Civil Engineering, Leland Stanford University, California. Published by the author at Palo Alto, California. Price, 40 cents.

This is a book in paper covers, containing thirty-five pages, about 6 by 8, and giving some thirty alphabets in large and small type. The author says they have been selected as a guide to the pupils in his engineering classes for the formation of a style of rapid lettering adapted to working drawings. The selection does not impress us as a happy one, viewed from a practical standpoint. The best letters are not adapted to freehand work, and the others in general are lacking in beauty or legibility. The amount of shading required by some of them, in the absence of all instruction as to how it is to be made, renders them ill-adapted for office use where "*time is money*."

OUR ILLUSTRATIONS.

Foreign Sketches, by L. F. Plympton.

Entrance, John M. Van Osdel, architect.

Apartment Building, Chicago, Patton & Fisher, architects.

New Criminal Court Building, Chicago, Otto H. Matz, architect.

Apartment Building, Chicago, Frederick W. Perkins, architect.

The Great Northern Hotel, Chicago, Burnham & Root, architects.

Hotel Building, Leavenworth, Kansas, Patton & Fisher, architects, Chicago.

Row of Houses for Mrs. Lamb, Lincoln, Nebraska, J. Tyler & Son, architects.

The William Goodall Building, Cincinnati, Ohio, George W. Rapp, architect.

Residence of W. R. Ford, Pittsburgh, Pennsylvania, S. T. McClarren, architect.

The Pueblo Opera House Building, Pueblo, Colorado, Adler & Sullivan, architects, Chicago.

Choral Building, World's Columbian Exposition, Chicago, Francis M. Whitehouse, architect.

The Union Passenger Station at Portland, Oregon, Van Brunt & Howe, architects, Kansas City, Missouri. This building is being constructed according to the plans and under the supervision of Messrs. Van Brunt & Howe, architects, of Kansas City, Missouri, who have been concerned in the erection of many of the most important buildings connected with the railroad systems of the West. It is intended for the joint accommodation of the Northern Pacific, the Southern Pacific and the Union Pacific roads. The longitudinal axis of the building is parallel to the track system which is diagonal to the direction of the city streets in that neighborhood. The adjustment of the building to the irregular outlines of the railroad property toward these streets has controlled the main features of the plan, the frontage of the depot toward the tracks presenting a comparatively unbroken face, while that toward the town, shown in the drawing, has boldly projecting features fitted to the available area. Sixth street being the natural approach to the building, the junction of this street with J street becomes the main entrance and exit to the structure, the tower, which is 132 feet high, being set in the axis of this street. The most important of the projections of the building toward the town on the west is a great apsidal pavilion, 64 feet wide by 134 feet 3 inches long. This is occupied by the main waiting hall, which is the principal feature of the building, both within and without. It extends through two stories, has two entrances directly from the streets under the shelter which is carried around the semicircular end, and at the end of the hall toward the track is placed the ticket, telegraph, Pullman and other offices, the exit and entrance to the tracks from this hall being arranged on either side of this system of offices. Over these offices runs a gallery looking over the hall and continuous with the main longitudinal gallery of the second story. The baggage and express accommodations of the roads are laid out north of this hall, while the passenger accommodations are extended southward from this main central feature. Ample accommodations are here provided for men's and women's waiting rooms, emigrants' rooms, restaurant and dining room. The kitchens occupy the extreme southern end of the main building. Detached from the main building and 76 feet south of it is an annex structure, 135½ by 37 feet, containing the boilers and all of the machinery connected with the heating and the electric lighting of the building and grounds. This building also contains laundry and additional accommodations for the service of the restaurant department. In the second story the main longitudinal corridor extends from end to end and passes across the main hall in a gallery, as above stated. To the right and left of this corridor are ample accommodations for offices so disposed as to be subdivided for the convenience of the roads occupying this space. The upper story is disposed of in a similar way, offices being extended in the third story over the main waiting hall, and there is ample staircase accommodation communicating both with the track side and the town side of the building. The exterior walls are faced with the rough-cast peculiar to Portland, set in panels between face brick quoins which accentuate all the external angles and windows of the building. This face-brick treatment also is used in an external dado or stylobate 8 feet high, which is carried

entirely around the building, and in string courses and cornice, as shown. The roofs are to be covered with metallic Spanish tiles, and the four dial faces in the tower are to be illuminated according to the best methods now extant. The main corridors and halls of the first story are to be paved with marble mosaic, and the building will be fitted with all the appliances known to the most advanced railroad service in the country. The main building and annex are constructed upon piles, upon which are built foundations of concrete. As at present arranged, there are six parallel tracks, which are arranged to be covered by a shed 102 feet wide and 630 feet long, resting upon steel and wooden trusses, set 30 feet apart, these divisions of 30 feet constituting one element which controls the main divisions of the plan of the depot. This train shed is not included in the present contract. It is arranged to be set 30 feet clear of the building and connected with it where necessary by glass roofs, so that all the traffic on the main platform will be properly protected from the weather.

Photogravure Plate. Cottage of M. E. Ingalls, Hot Springs, Virginia, G. W. E. Field, architect, Richmond, Virginia. Laundry Building; same place and same architect.

PHOTOGRAVURE PLATES.

(*Issued only to subscribers for the Photogravure edition.*)

Armour Institute, Chicago, Patton & Fisher, architects.

Dining Room, Detroit, Michigan, Mason & Rice, architects.

The Newberry Library, Chicago, Henry Ives Cobb, architect.

Fire Engine House, Detroit, Michigan, Donaldson & Meier, architects.

Residence of Mrs. McAdon, Detroit, Michigan, John Scott & Co., architects.

Entrance, Cobb Lecture Hall, The University of Chicago, Henry Ives Cobb, architect.

Residence of Alexander McDonald, Clifton, Cincinnati, Ohio, Samuel Hannaford & Sons, architects.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than $5,000 are not published.

Buffalo, N. Y.—Architect W. H. Archer has prepared plans for a colonial residence for Mrs. A. B. Williams, Tonawanda, New York; to be 70 by 50 feet, two stories and basement, built of pressed brick and Medina stone, copper and galvanized iron enrichments, roofing, oak, cherry, and natural colonial finish, bathroom outfits, electric bells, blinds, incandescent lighting, gas fixtures, plate, cut and beveled glass, grates, reflectors, ventilators, laundry fixtures, heating, galvanized ironwork, iron window guards, wood and slate mantels, tiling, hygienic plumbing, washstands, water-closet fixtures, refrigerators, laundry tubs, boiler and range; cost $20,000. Has also prepared plans for two eight-room schoolhouses at Tonawanda, New York, two stories and basement; cost $30,000. For G. Riesterer, a two-and-a-half story colonial residence, stone foundation, 35 by 50 feet; to cost $6,000; also a two-story frame barn. For Mrs. Dotterweich, Dunkirk, New York, a two-story brick dwelling, stone trimmings, slate roof, 30 by 50 feet; cost $8,000.

Chicago, Ill.—Architects Jenney & Mundie have completed preliminary drawings for a twelve-story store and office building, to be erected at 167 to 175 La Salle street, for Hamilton B. Bogue and others. It will be of pressed brick, stone and terra cotta; the frontage will be 141 4-10 feet on Monroe street and 80 feet on La Salle street, and it is intended to be the finest office building in the city; the estimated cost is $600,000. The same architects have also made preliminary drawings for a twelve-story office building, to be erected on the southwest corner of Clark and Monroe streets, to be called the Galena building; it will be constructed of pressed brick, stone and terra cotta, and will front 90 feet on Monroe street and 80 feet on Clark street; it will have an elaborate interior finish, and the probable cost will be $400,000.

Architect D. H. Burnham has made preliminary drawings for a twelve-story office building, to be erected at 157 to 163 La Salle street, for H. J. Furber. Also completed preliminary drawings for a twelve-story office building, 90 by 190 feet in size, to be erected at 148 to 154 Monroe street, for Rand, McNally & Co.

Architects Flanders & Zimmerman have completed drawings for the "World Hotel" to be erected near the World's Fair grounds. It will be three stories, 275 feet front and 187 feet deep; will be constructed of staff and tile, with tile partitions; have dining rooms, kitchen, serving rooms, offices, etc. The cost will be about $125,000. Also finished drawings for the following buildings: A three-story and basement high school, 181 by 124 feet in size, to be erected on Kimbark avenue, between Fifty-sixth and Fifty-seventh streets, Hyde Park; to be of pressed brick, stone and terra cotta, have steam heating, sanitary improvements and to cost about $110,000. A three-story, basement and attic addition to the Englewood High School, corner of Kenwood and Stewart avenues; to be of pressed brick and terra cotta, have steam heating and all improvements and to cost about $65,000. A three-story addition to the Anderson school, 75 by 100 feet in size, corner of Lincoln avenue and Division street; to be of pressed brick and terra cotta front. Two three-story and basement additions to Shurtleff school, corner of Vale and Seventieth streets; to be of pressed brick, terra cotta and cut stone; to cost about $100,000. A three-story addition to LaSalle school, 40 by 70 feet in size, corner of Eugenie and Hammond streets; to be of pressed brick, cut stone and terra cotta, have steam heating and all improvements; to cost $50,000. A three-story addition to Wicker Park school, on Greenwood avenue and Wright street; size 40 by 90 feet; to be of pressed brick, terra cotta and cut stone; to cost about $50,000. A three-story and basement school, 100 by 125 feet in size; to be of pressed brick, terra cotta and cut stone, have steam heating and sanitary improvements; to cost about $75,000; the location is Sheridan street and Wedge avenue. A three-story and basement school, 100 by 125 feet, to be erected on Cornelia street and Hoyne avenue; to be of pressed brick, cut stone and terra cotta, have steam heating, etc.; to cost $75,000. Also finished drawings for the Illinois Condensed Milk Company's dairy, to be erected on Carpenter and Fulton streets. It will be three stories and basement, 72 by 62 feet in size, to be of pressed brick and stone front, have stables, offices, etc.

Architect J. A. Miller: For Messrs. Mark L. Day and E. B. Griswold, five three-story and basement residences, 100 feet front by 66 feet deep, to be erected on Madison avenue, between Sixtieth and Sixty-first streets. They will have handsome stone fronts, hardwood interior finish, the best of sanitary improvements, and cost about $7,500 each.

Architect Jules De Horvath: For a syndicate, a three-story frame hotel, 200 by 160 feet in size, to be erected near the World's Fair.

Architect L. G. Hallberg: For O. M. Carson, on the southeast corner of Deming court and Clark street, a three-story flat building, 50 by 90 feet in size; to be of two fronts in rockfaced stone, have all the improvements, and cost $35,000.

Architect Frederick W. Perkins is finishing plans for an apartment hotel to be erected on the North Side, fronting on Washington Place, 100 feet frontage by 120 feet deep; to be ten stories high, of fireproof construction; the exterior will be of marble for the first two stories and above this will be of pressed brick and terra cotta; the interior will be the very best of finish with mosaic floors, marble wainscoting, etc.; it will be an imposing structure in the Italian Renaissance style of architecture; in connection with the above will be café banqueting rooms, and private dining rooms; apartments will be in suites of two to four rooms with bathroom to each suite; there will be a few single rooms; the cost will be about $350,000.

Architects Powell & Kingsley: For R. A. Griefenhagen, on Dearborn avenue, near Schiller street, two four-story apartment houses, 56 by 68 feet in size; to be of pressed brick and stone for one front and the other to be entirely of stone; all the best of sanitary and modern improvements will be put in and the cost will be about $50,000. For Harry C. Pratt, on Leavitt street, near Polk, a three-story flat building; 40 by 65 feet in size; to contain six suites of six rooms each; the front will be of stone; cost $20,000.

Architects Gondie & Ohrenstein: For Miss E. A. W. Skinner, corner of Central Park avenue and Twenty-fourth street, a three-story apartment house; 100 by 125 feet in size; to be of pressed brick and stone on two fronts; have all improvements, and cost about $50,000. For Mrs. Belle Adams, on Armour avenue, near Twenty-seventh street, a three-story store and flat building; 25 by 100 feet in size; to have a front of pressed brick and stone, with galvanized iron cornice and bay; cost $12,000. For H. A. Ritter, a two-story residence; 28 by 50 feet in size; to be erected on Lipman avenue; it will be of frame construction, with stone basement, have hardwood finish, and cost $6,000. For William Goetz, at West Ravenswood, nine two-story frame houses; to have bathrooms, closets, mantels, etc.; cost about $18,000.

Architects W. W. Boyington & Co. are preparing plans for the Hamilton club, to be erected at 2945 Michigan avenue; it will constructed of stone, pressed brick, and terra cotta; be four-story and basement; 50 by 160 feet in size; have hardwood finish, marble and mosaic work, and all the best of modern improvements.

Architect I. C. Zarbell has completed drawings for the manual training school to be erected at Glenwood; it will be three stories and basement; of rockfaced stone and pressed brick on two sides; cost about $25,000.

Architect George W. Maher: Made plans for the power house and office building to be erected on Evanston avenue near Ardmore, Edgewater, for the Chicago and North Shore Street Railway company. It will be a two-story building, 100 by 230 feet in size; to be constructed of pressed brick and terra cotta. For Oscar Bass, on Forty-sixth street near Greenwood avenue, a four-story flat building; 46 by 70 feet; to be of pressed brick and stone front; have hardwood finish, and cost $30,000.

Architect F. M. Andrews: For the Ætna Paper Company, Dayton, Ohio, a three-story paper mill; 280 by 280 in size; to be of common brick, mill construction; cost about $55,000.

Architect Theodor Lewandowski: For E. S. Schenk, on Sulzer street, a two-story basement and attic residence; 26 by 54 feet in size; to be of frame construction, with stone basement; have hardwood finish and all improvements; cost $7,000. For the same owner, on Morgan street, a three-story and basement flat building; 40 by 56 feet; to be of pressed brick and stone front; cost $13,000. For N. E. Rathjen, on Evergreen avenue, a two-story and basement residence, 22 by 56 feet; of stone front, hardwood interior finish; cost $6,000. For F. F. Bischoff, a two-story factory, 107 by 50 feet; and a one-story building, 187 by 50 feet; also boiler and engine room, stamping room, foundry and model room.

Architect A. G. Ferree: For J. T. Estep, at Berwyn, a two-story frame house, with stone basement, sanitary plumbing, mantels, furnace, etc. For the same owner, a double, two-story frame residence; to have stone basement, all the sanitary improvements, furnaces, mantels, etc. For Andrews & Piper, at Berwyn, two two-story frame houses; with stone basements, mantels, furnaces, etc.

Architect J. N. Tilton has completed drawings for the Woodlawn Avenue Episcopal Church; 50 by 100 feet in size; to be constructed of pressed brick and stone; have yellow pine interior finish; cost about $30,000.

Architect Ira C. Saxe: For Poorbaugh & Co., at Windsor Park, a two-story hotel; 150 feet front by 50 feet deep; the front will be of jasper granite, rockfaced, and stone cornice; all the modern heating and sanitary improvements will be put in. After the Fair this building will be remodeled into an apartment house.

Architect J. M. Schroeder: For Theodor Podolski, at West Pullman, a three-story store and flat building; 50 by 72 feet in size; to be of buff pressed brick, and stone front; to have all the sanitary plumbing; finish in natural woods; cost $14,000. For M. Doyle, on Seventy-second street and Langley avenue, a two-story frame house, 22 by 70 feet; to have bathrooms, closets, gas fixtures, hardwood mantels, etc.

Architects W. G. Ruehl & Co.: For D. K. Martin, at Freeport, a three-story and basement store and flat building; 50 by 52 feet in size; to be of pressed brick and stone front, with galvanized iron bay; all the sanitary improvements; hardwood mantels. For S. A. Heller, at 317 Ogden avenue, a three-story and basement store and flat building; 25 by 54 feet; to be of pressed brick and stone front; have all the modern improvements, mantels, etc. For M. Behand, at Lawndale, remodeling frame residence; will put on new front and brick and stone basement; new plumbing, heating, hardwood mantels, speaking tubes, bells, etc.; cost about $7,500. For Henry Smith, on Trumbull avenue, near Ogden avenue, a two-story and basement flat building; 22 by 58 feet; to be of pressed brick and stone front; have hardwood trimmings, open plumbing, mantels, etc. For M. Hunt, on Paulina street, near Twenty-third street, a two-story and basement flat building; to be of pressed brick and stone front; have all the improvements. For Kanter Brothers, corner of Maxwell and Canal streets, a three-story factory; 23 by 54 feet in size; to be of pressed brick and stone front. For P. Viehmann, on Trumbull avenue, near Ogden, a three-story and basement flat building; 25 by 52 feet; to be of stone front; have the sanitary plumbing, hardwood mantels, etc. For Miss Shay, on the southeast corner of Polk street and Kedzie avenue, a three-story and basement flat building; 50 by 33 feet in size; to be of pressed brick and stone front. For L. Marks, remodeling residence at 911 Homan avenue.

Architect Oscar Cobb: Finishing plans for the Ninth Street Theater, to be erected at Kansas City; it will be constructed of pressed brick and stone; have seating capacity of 2,250; all modern improvements will be put in.

Architects Stiles & Stone: Have completed drawings for the nine-story apartment house, to be erected on Lake avenue and St. James place for the Davis Parkside Company; work will be commenced some time this summer; it will be 140 by 141 feet in size; have two fronts of cut stone, hardwood interior, marble, mosaic, and tile work, elevators, steam heating, and the best of sanitary improvements.

Architect E. Kaufmann: For J. S. Chadwick, at Chicago Heights, a two-story frame hotel; 48 by 76 feet in size.

Architect C. F. Herman: For B. Radloff, on the southeast corner of Sheffield avenue and George street, a three-story and basement store and flat building; 24 by 84 feet; to be of pressed brick and stone front, have galvanized iron bay; all the sanitary improvements; cost $12,000. For B. Klausen, on Bosworth avenue, south of Addison street, a two-story residence; 24 by 56 feet; to be of brick basement and frame.

Architects Mayo & Curry: For James G. Stevenson, on Oglesby avenue, near Sixty-third street, a three-story apartment house, 100 by 135 feet in size, to be constructed of common brick and stone, covered with staff. It will contain 160 rooms and cost about $60,000.

Architect Alfred Smith: For O. Brewer, on Woodlawn avenue, between Sixtieth and Sixty-first streets, a three-story and basement hotel, 50 by 68 feet in size, to be of pressed brick and stone, have hardwood finish, sanitary plumbing and all improvements. For D. H. McDonald, on Paulina street, near Wilson avenue, a two-story, basement and attic residence, to be of buff pressed brick and stone front, have hardwood interior finish, electric light, furnace or hot-water heating and all the sanitary improvements; to cost $8,000.

Architect Perley Hale: For Messrs. Campbell, Kellogg, et al., four two-story residences, to be erected at Auburn Park; they will be of stone fronts, have oak interior finish, electric light, heating, the best of sanitary plumbing, and cost $5,000 each.

Architects Holabird & Roche have finished drawings for the Champlain building, to be erected on the northwest corner of State and Madison street; it will be sixteen stories and attic fronting 66 feet on State street and 106 on Madison street; the two fronts will be of terra cotta and the interior will have all the usual finish, such as elevators, steam heating, electric light, marble, tile, mosaic floors, etc.; the cost will be $600,000. Also completed drawings for the

Marquette building, to be erected on the northwest corner of Adams and Dearborn streets; the fronts will be of brown pressed brick with terra cotta trimmings and the interior will be elaborately finished in marble, mosaic and tile work; have elevators, steam heating, electric light, etc.; the cost will be $1,000,000; it will front 114 feet on Adams and 190 on Dearborn and 141 on the alley, the height of the building being sixteen stories. Also finished drawings for the Union Park Theater, to be erected on the northwest corner of Ogden avenue and Madison street; it will be six stories and have a front of pressed brick, stone and terra cotta, with hardwood finish, steam heating, electric light, etc.; to cost $175,000.

Architect Joseph Bettinghofer: For Charles S. Gloeckler, at 1821 Frederick street, remodeling residence and two-story and basement addition. For Ferdinand Luth, on Centre street, between Bissel and Fremont strects, a stable, 50 by 100 feet in size, to have pressed brick and terra cotta front. For Frederick Wendt, a two-story and basement flat building, 24 by 65 feet, to be of stone front, to be erected on Perry street, near Sulzer street. For Chunis Zuber, on Halsted street, near Centre street, a three-story and basement store and flat building, size 22 by 52 feet, to have a front of pressed brick and stone. For Fred Lange, a one-story café and restaurant, 36 by 75 feet in size, to be of brick and iron, with plate, stained and beveled glass; will be erected near the World's Fair. For C. J. Rose, on Mohawk street, near Menominee, a two-story and basement flat building, of pressed brick and stone front. For E. G. Allbeck, on Graceland avenue, a two-story and basement flat building, to be of frame with brick basement. For G. Joetten, on the southwest corner of North avenue and Townsend street, a four-story and basement store and flat building, 22 by 90 feet in size, to have two fronts of pressed brick and stone with galvanized iron bays, the sanitary plumbing, wrought-iron store fronts, plate glass, stone sidewalks all around; to cost $13,000.

Architects I. K. & A. B. Pond: For Clarence E. Bement, at Lansing, Michigan, a two-story basement and attic frame residence; 30 by 65 feet in size; to be of stone basement, have hardwood finish, sanitary plumbing, etc.; cost about $8,000. For Miss Mary R. Smith, at Polk street, near Halsted street, a two-story and basement kindergarten and crèche; size 25 by 72 feet; to be of pressed brick front; have interior finish in white pine, all sanitary improvements, heating, etc.

Cincinnati, Ohio.—Reported by Lawrence Mendenhall. Since my last letter the much-to-be-dreaded indications and rumblings of a strike among the bricklayers have disappeared. The contractors and employés have met, discussed, and settled the question of wages. The rate to be paid is 50 cents per hour, eight hours to constitute a day's work. The architects and contractors are to be congratulated, and even the employés themselves must acknowledge that it is for the best of all concerned. It is to be hoped that some day a graduated scale of prices, according to skill and proficiency only, may be inaugurated and successfully carried out. Such a plan is bound to result in good. Suburban improvements will take a boom this year, and several prominent corners will be graced with substantial structures. There seems to be very little demand for office buildings just now, either from the fact that there are too many, or that the locality in which they are situated is not central enough for certain lines of trade.

Architect JamesW. McLaughlin has prepared plans for a residence for Thomas Gibson, care of Thomas Gibson & Co.; materials: brick, stone, slate roof; furnace, hardwood, gas, plumbing, grates, mantels, stained glass, etc.; cost $12,000.

Architects S. Hannaford & Sons have drawn the plans for the city of Cincinnati for a market house, under the Holroyd bequest; materials: brick, iron, slate roof, etc.; cost not stated, but the bequest was $15,000.

Architect A. O. Elzner has prepared plans for a residence for N. H. Davis; size 15 by 90 feet, three stories high; materials: stone and copper, slate roof; gas, plumbing, furnace, grates, stained glass, mantels, etc; cost $12,000.

Architects Crapsey & Brown have prepared plans for Presbyterian church at London, Ohio; materials: stone, slate roof; furnace, hardwood, pews, stained glass, gas, plumbing, etc.; cost $35,000.

Architect W. W. Franklin reports: For Mr. Chas. Domhoff, care of M. Addy & Co., a residence; materials: brick, slate roof, furnace, pine finish, grates, mantel, stained glass, etc.; cost $4,000.

Architects Boll & Co. report: For Mr. W. T. Carter, 213 West Fourth street, a residence; materials: pressed brick and frame, furnace, grates, mantels, stained glass, gas, plumbing, etc.; cost $5,000. For Catherine Lewis, care architects, a residence; materials: frame, furnace, grates, mantels, stained glass, blinds, etc.; cost $5,000.

Architects Rapp & Aiken report: For Dr. Chauncey D. Palmer, a residence; materials: pressed brick, furnace, plate and stained glass, dumb waiters, grates, mantels, gas, plumbing, etc.; cost $20,000. Also for Mr. J. M. Potter, flat building; size 50 by 90 feet; four stories; materials: pressed brick, tin roof, furnace, iron work, stained glass, elevators, etc.; cost $20,000. Also for Lovell C. Rose, Price Hill, Cincinnati, a residence; materials: frame, furnace, slate roof, plate and stained glass, grates, mantels, gas, plumbing, etc.; cost $11,000.

Architects Des Jardins & Hayward report: For Max Lowenstein, 221 Walnut street, Cincinnati, a residence; materials: pressed brick, slate roof, hardwood, grates, mantels, furnace, stained glass, etc.; cost $15,000.

Architect S. S. Godley reports: For E. J. Mack, Grandview avenue, Cincinnati, a residence; materials: pressed brick, slate roof, furnace, hardwood finish, gas, plumbing, stained glass, grates, mantels; cost $15,000. Also plans for Edward Heinsheimer, Cincinnati, a residence; materials: pressed brick, slate roof, furnace, grates, mantels, stained glass, etc.; cost $18,000.

Architect Louis Piket reports the following: Mr. A. Dietrich, care architect, has had plans drawn for four houses; materials: pressed brick, slate roof, grates, mantels, stained glass, gas, plumbing, etc.; cost $12,000. Chapel for St. Stephen's Church (Catholic), Newport, Kentucky; size 20 by 50 feet; materials: pressed brick, slate roof, gas, stained glass, etc.; $2,500. For John O'Brien, Price Hill, Cincinnati, a residence; materials: pressed brick, slate roof, grates, mantels, gas, plumbing, blinds, etc.; cost $3,000.

Architect J. G. Steinkamp, 80 West Court street reports: For Thomas Emery's Sons, a flat and buildings; materials: brick, frame, slate roof, grates, mantels, gas, plumbing, etc.; cost $40,000.

Cleveland, Ohio.—Architect S. R. Bagley reports the following work: A banking and office building, for the Cleveland Permanent Building and Loan Company, on Euclid avenue, near Erie street, to be 75 by 132 feet, and cost $45,000; it will be a stone front, six stories high, and will be equipped with all the modern appliances, including electricity. A residence for Rev. J. W. Malone, on East Prospect street, to be built of stone in the Old Colonial style; 42 by 56 feet; cost $8,000. Church at Mount Union, Ohio; 115 by 96 feet; pressed brick and stone trimmings; cost $20,000; heated by furnace, and lighted by electricity and gas; the church will seat 600, and Sunday-school room 500, the two opening together, making a total capacity of 1,100 seats. Toronto Music Hall, Toronto, Canada; 118 by 132 feet; pressed brick and stone trimmings; seating capacity 4,000; cost $65,000; lighted by electricity and gas; heated and ventilated by the fan blower system; basement to be finished for janitor's rooms, rehearsal rooms, etc.; building is being built by H. A. Massey and by him presented to the city.

Architect John N. Richardson reports: An addition to the Lithograph Building; 40 by 165 feet in size; four stories high; of brick and cut stone; cost $20,000.

Architects Coburn & Barnum report: An art gallery for Prof. C. F. Olney, on Jennings avenue; 40 by 75 feet; pressed brick, terra cotta, and marble; cost $25,000; to be thoroughly fireproofed; lighted by gas and electricity, and heated by steam. Addition to First Congregational Church; finishing interior; cost $10,000. Residence for David Griese; frame; cost $6,000.

Denver, Colo.—Architect John F. Mackey: For A. McAllister, a three-story business block; brick; size 25 by 100 feet; cost $18,000.

Architect F. E. Kidder: For E. W. Alexander, a two-story brick and stone dwelling; size 31 by 56 feet; cost $8,000. For George Bailey, a two-story residence; size 34 by 35 feet; brick and stone; cost $5,000.

Architect Thomas A. Green, Jr.: For F. Morell, a three-story dwelling; size 20 by 45 feet; brick and stone; cost $5,000.

Architect C. E. Greaser: For Coe Bros., a two-story residence; size 34 by 45 feet; cost $7,000.

Architects Baerresen Bros.: For George C. Jones, a brick residence; size 32 by 47 feet; cost $10,000.

Architects F. E. Edbrooke & Co.: For F. P. Morehead, a two-story brick dwelling; size 44 by 53 feet; cost $5,900.

Architect H. T. E. Wendell: For Mrs. M. M. Clark, a brick dwelling; size 42 by 45 feet; cost $7,000.

Architect F. C. Eberly: For Philip Feldhauser, a three-story business block; size 37 by 120 feet; cost $24,000.

Architect P. H. Reed: For F. R. Ross, a two-story dwelling; size 32 by 52 feet; cost $12,000.

J. B. Peterson will build a two-story dwelling; size 30 by 49 feet; cost $10,000.

There were 114 permits granted in February, amounting to $265,668. Outlook for the coming season is splendid.

Detroit, Mich.—Architect W. D. Butterfield: For Valpey & Co., a four-story brick store; cost $20,000. For the Methodist Episcopal Society, Ludington, Missouri, a brick church; size 79 by 96 feet; cost $12,000. For John W. Porter, Port Huron, a two-story residence; pressed brick, cut stone trimmings; cost $8,000.

Architects A. C. Varney & Co.: For Henry Wagner, a three-story brick block, brownstone trimmings; 25 by 80 feet; cost $8,000. For the Wolverine Manufacturing Company, a three-story brick manufactory; 50 by 60 feet; cost $6,000. For Mrs. M. J. Foster, a two-story brick double residence; to cost $5,000.

Architect E. C. Van Leyen: For James F. Moore, a two-and-one-half story stone and frame residence; to cost $8,500. For Peter Kahs, a two-story stone flat building; cost $5,200.

Architects E. A. Walshe & Son: For R. J. Wilson, a two-and-one-half story brick residence; cost $8,000.

Architects M. L. Smith & Son: For D. J. Campau, block of three-story brick stores and flats; size 125 by 80 feet; cost $38,000.

Architect A. E. French: For E. Brennen, a three-story brick double residence, with stone trimmings; cost $7,500.

Architect H. J. Rice: For Mrs. A. Keenan, a two-story brick and frame residence; to cost $5,000.

Architect George W. Myers: For Mrs. Charlotte Watzka, a two-story brick factory; to cost $6,000.

Kansas City, Mo.—Architect L. G. Middaugh is just completing for Thos. Corrigan a four-story family hotel at Eleventh and Washington streets, of brick with all modern improvements, which cost $40,000; the feature of the hotel is the dining-room, which will be very handsome. Also schoolhouse at Independence, two stories, brick; to cost $16,000. For J. D. McPherson, residence, on Prospect avenue, north of Independence avenue, two stories and attic, of brick, with brownstone trimmings; to cost $10,000. For Dr. Bryant, a business block on Main street, between Tenth and Eleventh, 39 by 120 feet, and to be either two or four stories in height.

Architect W. A. Wise: For the Kansas City Stock Yards Company, at Seventeenth and Bell streets, a brick horse market and stables; to cost $60,000.

Architect A. Van Brunt: Residence for A. T. Rogers, at Beloit, Kansas; frame, two and one-half stories, to cost $8,000.

Architect A. B. Cross: For A. C. Strine, a two-story residence at Westport, of brick; to cost $6,600.

Architect E. H. Farrar: For Dr. I. M. Ridge, a six-story brick and terra cotta business block, of modern construction, on the west side of Main street, between Ninth and Tenth; to cost $150,000; the building will be connected with the Ridge building on Walnut street, directly in the rear, by a tunnel and also covered passage-ways from each story.

Architects Matthews & Sanders: For J. T. Cheatham, at Warrensburg, Missouri, a two-story and attic frame residence; to cost $8,000. For Major H. C. Warinar, at Memphis, Tennessee, a three-story residence, with all the modern improvements, to be built of Warrensburg, stone, at a cost of $50,000. For the Magnolia Heat, Light and Power Company of Warrensburg, Missouri, an electric light plant, of brick; to cost $20,000.

Architect W. C. Root: For W. A. Walker, a residence at Birmingham, Alabama, two stories, with basement, brick, with slate roof; to cost $30,000. For the Kansas City, Fort Scott & Memphis railroad, boiler shops at Springfield, Missouri; to cost $20,000. Also the following buildings in Kansas City: For H. W. Evans, residence at Troost avenue and Twenty-eighth street, two stories with attic and basement, of brick; to cost $10,000. For the Children's Hospital Association, three-story brick hospital building at Tracy avenue and Twentieth street; to cost $15,000. For the Western Storage & Warehouse Company, warehouse at Eleventh and Santa Fé streets, four stories and basement, of brick; to cost $20,000. For Scarritt & Scarritt, overall factory on Central street, between Sixth and Seventh streets, five stories and basement, of brick; to cost $25,000. For the Schwartzchild & Sulzberger Packing Company, packing house at Armourdale, three stories and basement, of brick; to cost $25,000. For Dr. J. E. Logan, residence at Twelfth and Wyandotte, two stories and basement, of brick; to cost $12,000. For S. F. Groves, residence at Hyde Park, two stories, with attic and basement, of brick and shingles; to cost $6,000.

The contract for the new Ridge building, on Main street, between Ninth and Tenth streets, of which E. H. Farrar is the architect, was let last week to C. Everett Clarke, of Boston; it is to be completed by January 1, 1894, and will cost $150,000.

Architects look for a great revival of business this spring. Buildings are being planned and talked of in every part of the city, and a dozen or more structures of considerable magnitude have already been decided upon. The real estate market is getting squarely upon its feet again, and this means work for the architects.

Los Angeles, Cal.—Architect George H. Wejman: For the Bradbury estate, a 5-story business building; size 120 by 180 feet; on corner of Broadway and Third street; Arizona red sandstone, buff pressed brick, and terra cotta trimmings, to cost $500,000.

Milwaukee, Wis.—Architect W. A. Holbrook: For John Fitzgerald, a two-story double dwelling, to cost $10,000.

Architects Ryder & Co., Chicago: For F. Lewellin, a three-story stone residence: 40 by 70 feet, to cost $20,000.

Architects Ferry & Clas: For C. Best, a brick residence with terra cotta trimmings, cost $20,000.

The Merchant's Bank are having plans prepared for a new branch office on the South Side, the building will be four stories.

Architects Schnetzky & Leibert: For the Lake Side Distillery Company, a new building, to cost $40,000.

Nashville, Tenn.—Architect Robert Sharp: For Edward Baxter, a brick residence, stone foundation, slate roof; size 31 by 78 feet; cost $10,000.

Pittsburgh, Pa.—Architect C. Bickel: For the M. E. Book Company, an eight-story office building; size 32 by 112 feet; brick, with stone trimmings; to cost $75,000.

Architect W. S. Fraser is preparing plans for a new church building for the Sixth U. P. Church.

Portsmouth, Ohio.—Messrs. Crapsey & Brown, of Cincinnati, Ohio, have been employed as architects for the new opera house to be built at this place. The building will be 65 feet front by 130 feet deep, and three stories high. There will be two small stores in the front. The opera house will be on the ground floor, with two galleries above. The total seating capacity will be 1,200. The stage will be 35 feet deep and 60 feet high. The building is to be built of stock brick, trimmed with stone, and will cost about $30,000.

St. Louis, Mo.—Architect E. Wind: For E. G. Hans & Co., a two-story addition to warehouse; size 150 by 80 feet; cost $11,500.

Architects B. Weber & Son: Missouri Railway Company, a one-story passenger depot; size 70 by 100 feet; stone and brick; cost $29,000. For the Columbia Club, a four-story brick club house, with stone trimmings; 86 by 121 feet; to cost $75,000.

Architects Mathews, Clarke & James: For Dr. Morrell, a three-story residence and office; 35 by 70 feet; to cost $14,000.

Architect A. L. Rosenheim: For A. Arnstein, three-story residence; size 33 by 60 feet; cost $12,000.



COTTAGE FOR M. E. INGALLS, HOT SPRINGS, VIRGINIA.

G. W. E. FIELD, ARCHITECT, RICHMOND.



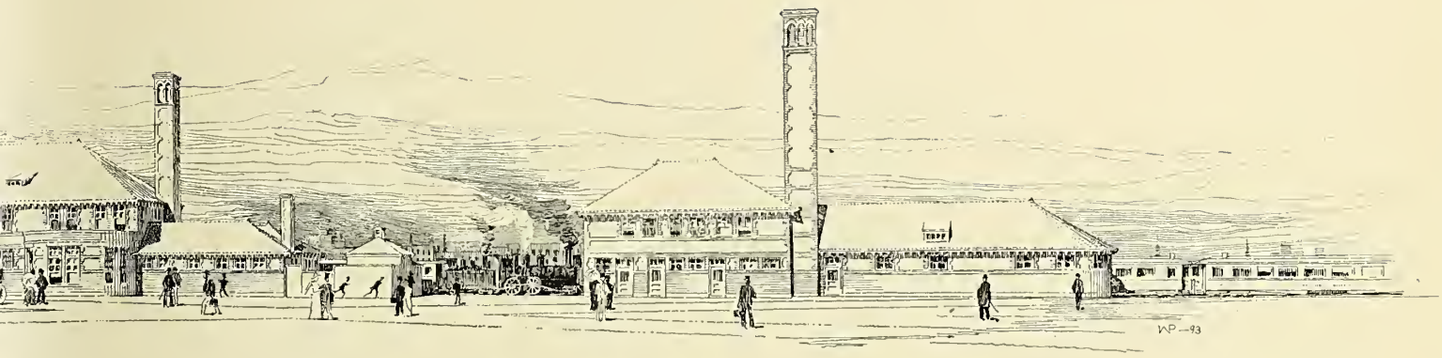
INLAND ARCHITECT PRESS.

LAUNDRY BUILDING, HOT SPRINGS, VIRGINIA.

G. W. E. FIELD, ARCHITECT, RICHMOND.



GRAND CENTRAL STATION · · PORTLAND, OREGON ·



VAN BRUNT AND HOWE ARCHITECTS, BOSTON AND KANSAS CITY.



·GRAND CENTRAL STATION · · PORTLAND · OREGON ·

VAN BRUNT AND HOWE ARCHITECTS · BOSTON AND KANSAS CITY ·

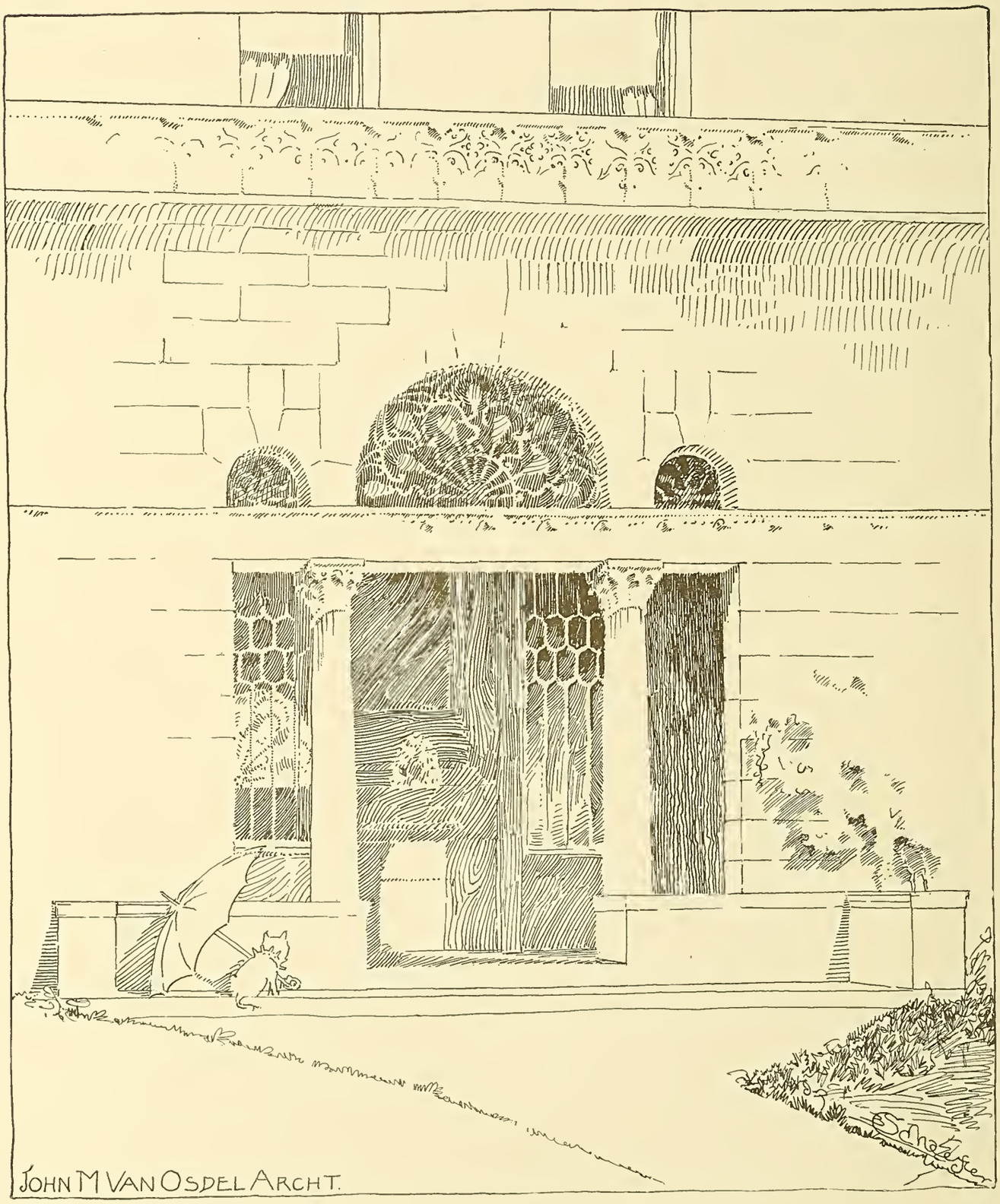
·THE·
·PVEBLO·OPERA·HOVSE· BVILDING·
·PVEBLO·COLO·
·ADLER & SVLLIVAN·
·ARCHITECTS·

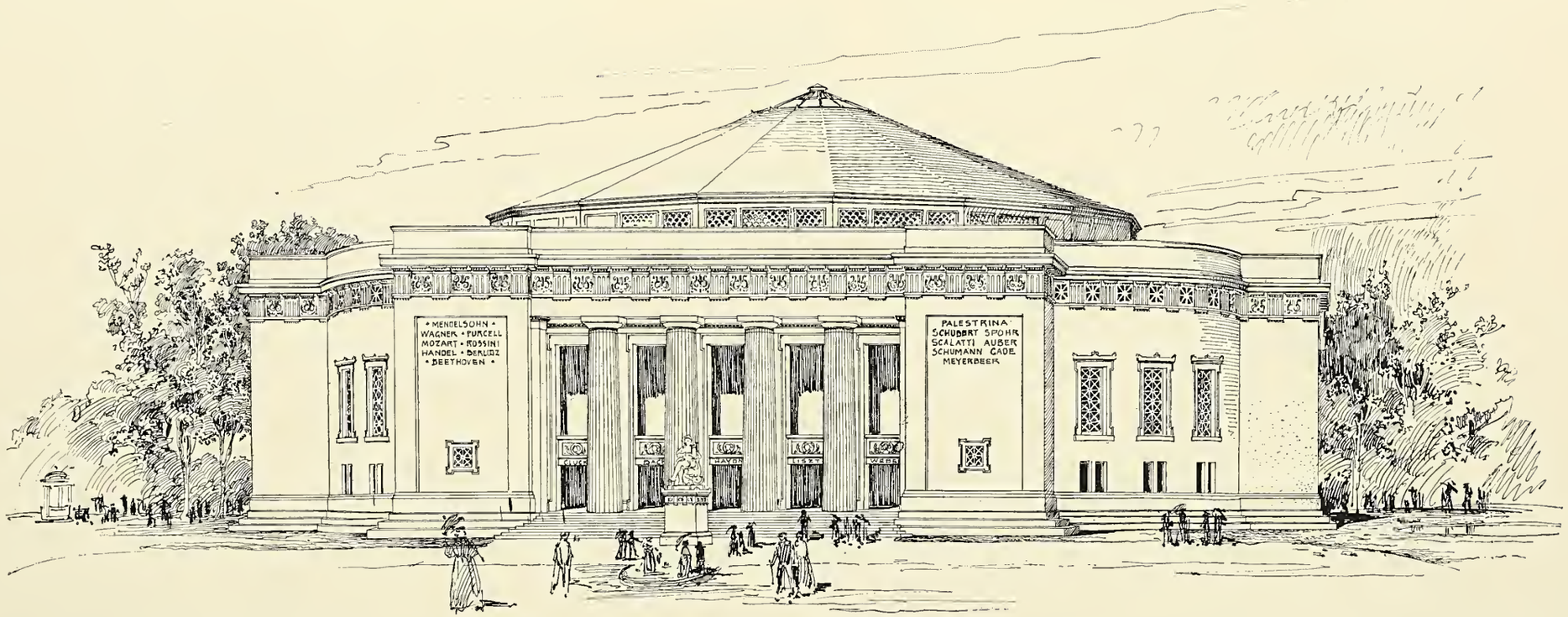




·THE·
·PVEBLO·OPERA·HOVSE· BVILDING·
·PVEBLO·COLO·
·ADLER & SVLLIVAN·
·ARCHITECTS·



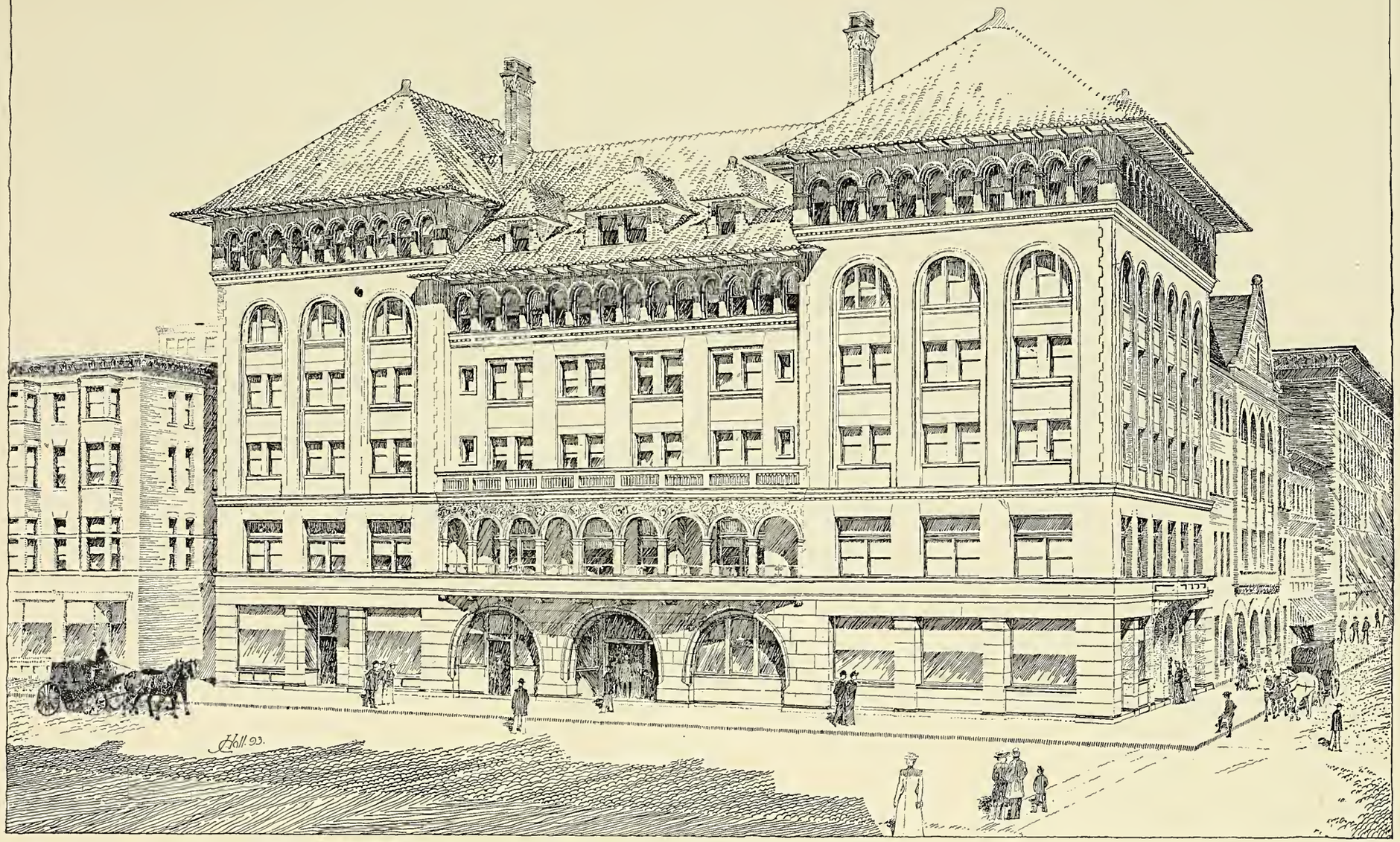

JOHN M VAN OSDEL ARCHT.

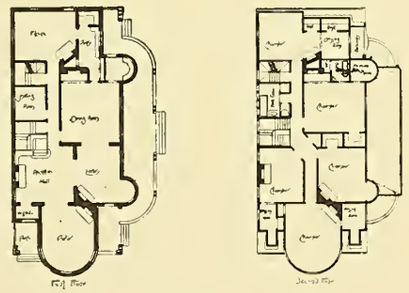


CHORAL BUILDING, WORLD'S COLUMBIAN EXPOSITION, CHICAGO.

FRANCIS M. WHITEHOUSE, ARCHITECT.

+HOTEL BUILDING
LEAVENWORTH · KANSAS +
PATTON & FISHER AR:
CHITECTS CHICAGO+





RESIDENCE OF W. R. FORD, ESQ. CENTER AVE. & NEVILLE ST. PITTSBURGH, PA.

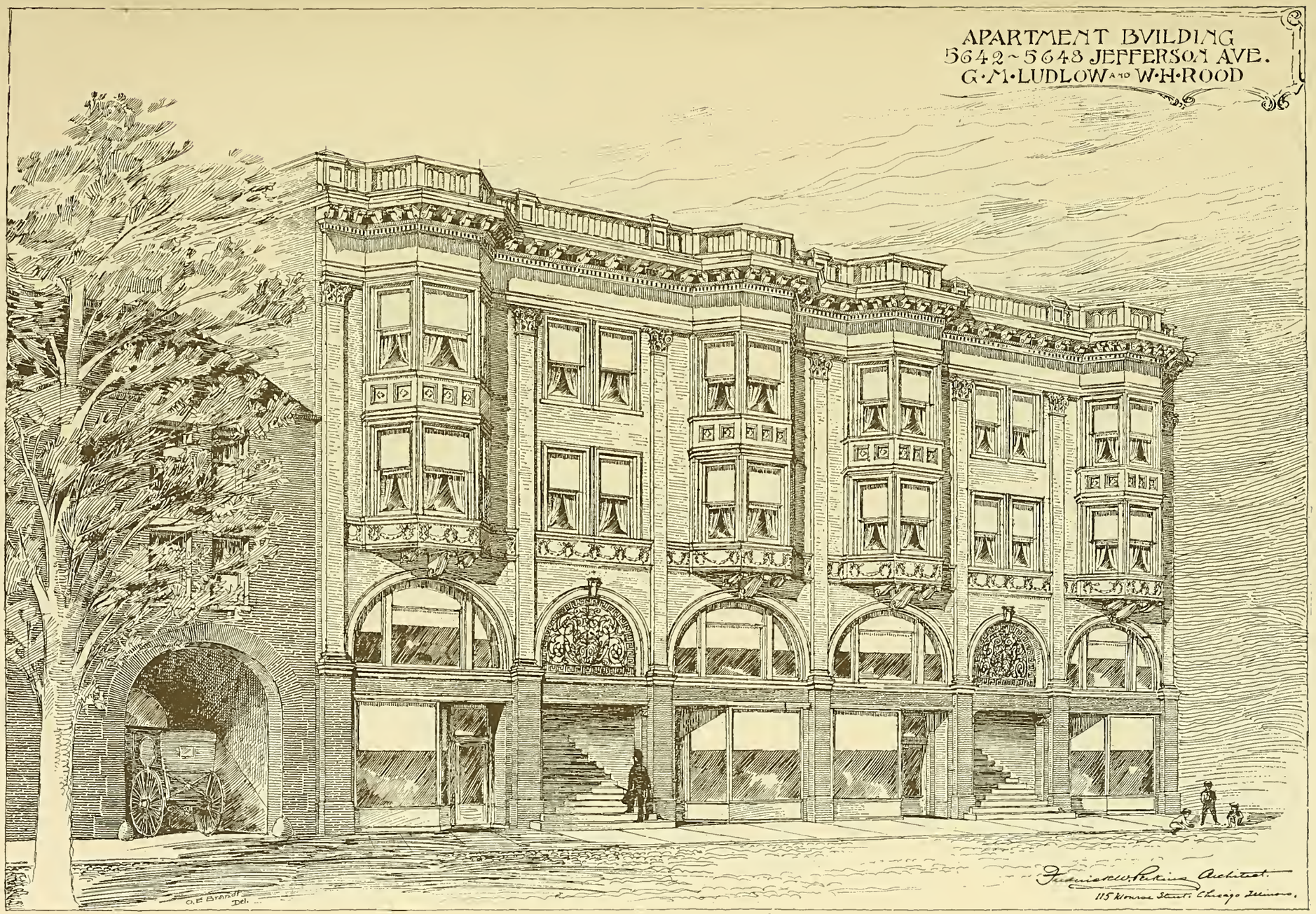
S. T. McClarren, Architect, Westinghouse Bldg. Pittsburgh, Pa.

THE WM GOODALL BUILDING CINTI O
GEO W RAPP ARCHT



ROW HOUSES.
FOR
Mrs LAMB.
LINCOLN.
J. TYLER & SON. NEB.
ARCHITECTS.




APARTMENT BUILDING
5642~5648 JEFFERSON AVE.
G·M·LUDLOW AND W·H·ROOD
O.E. Brandt Del.
Frederick W. Perkins Architect.
115 Monroe Street. Chicago Illinois.

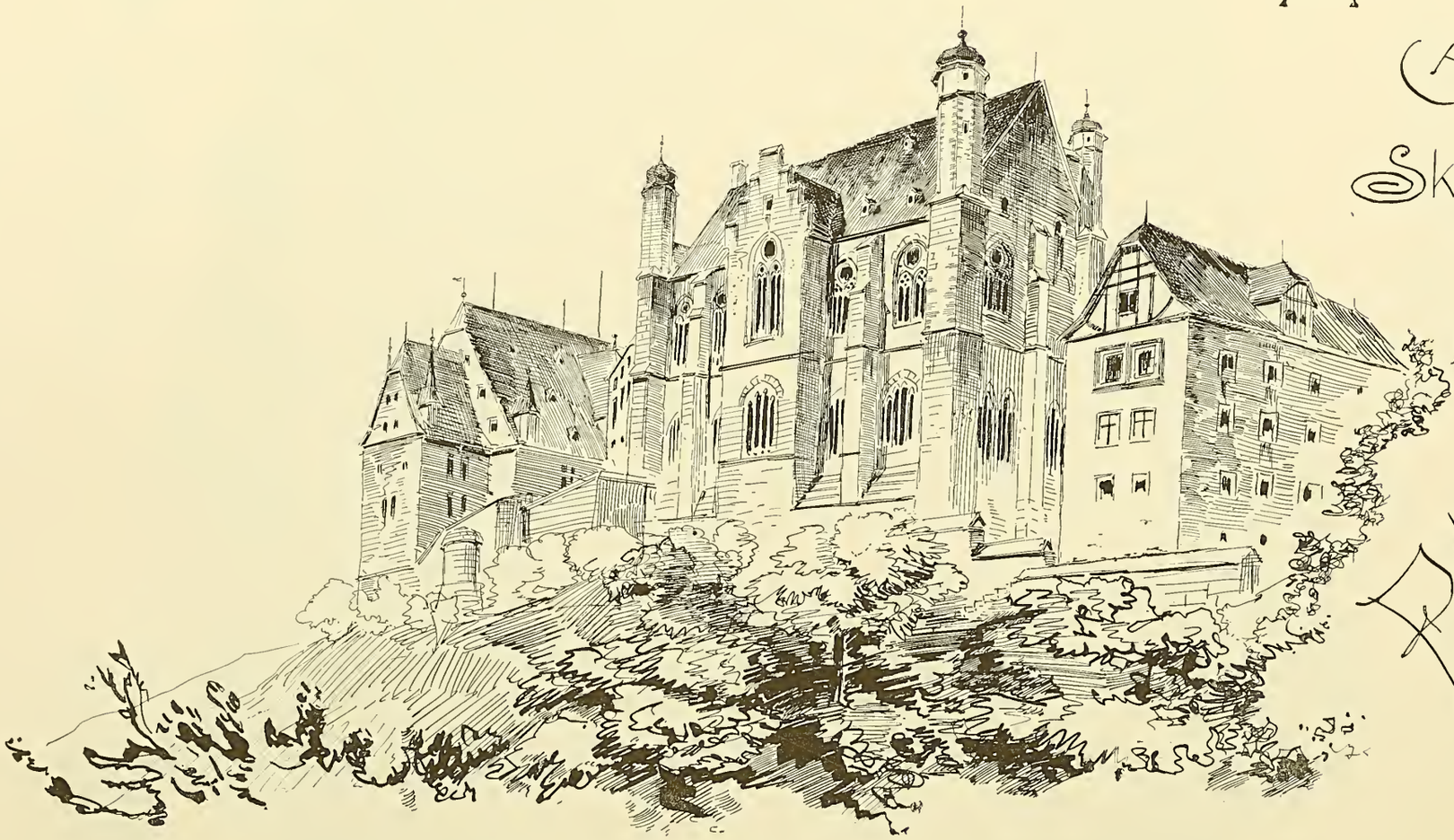


NEW CRIMINAL COURT BUILDING CHICAGO, ILLINOIS.
OTTO H. MATZ, ARCHITECT

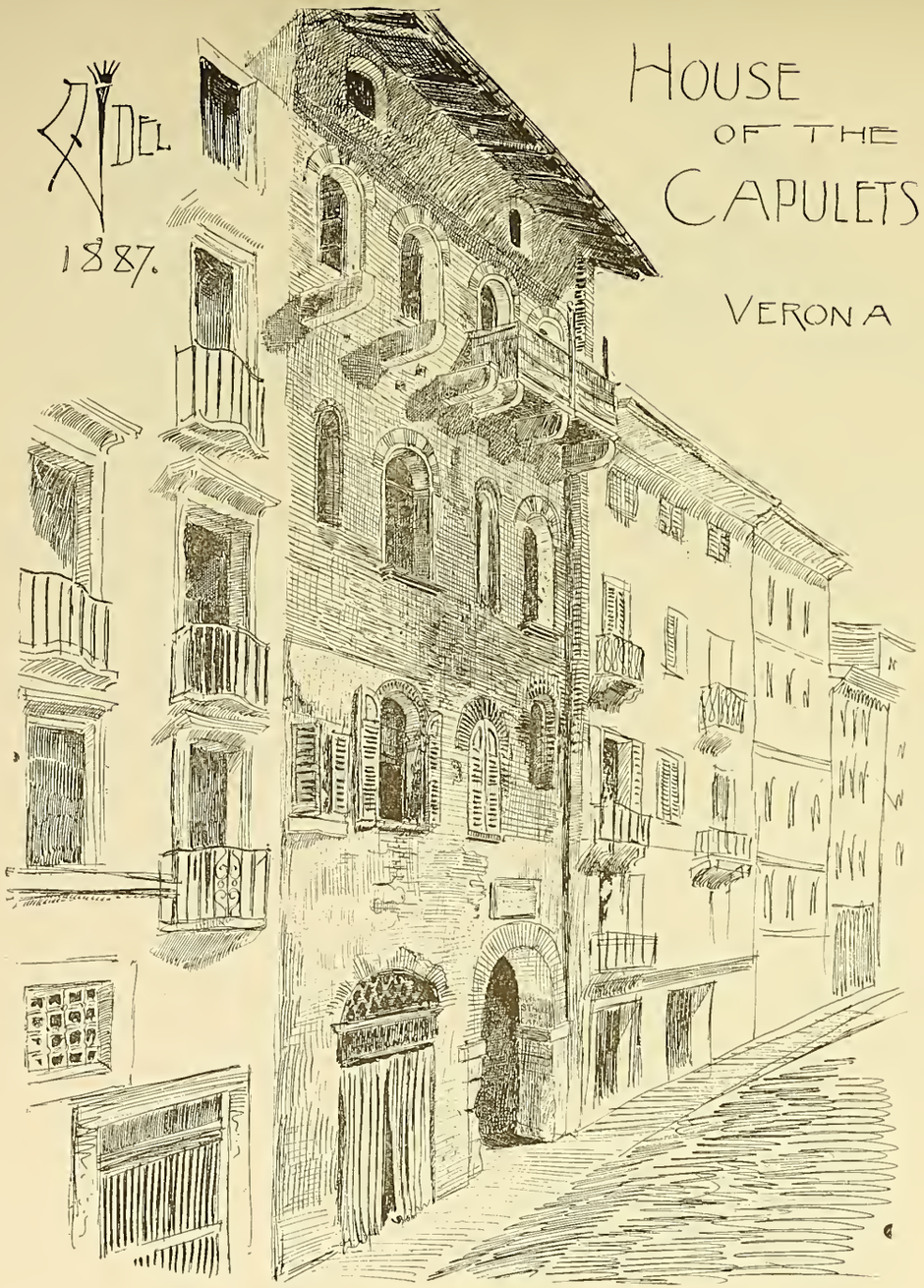

THE
GREAT NORTHERN
HOTEL.
CHICAGO.
EVERNHAM AND ROOT ARCHTS
Oscar Tolhurst 92.

MARBURG CASTLE

SKETCH FROM NATURE 1880



R. H. F. & C.

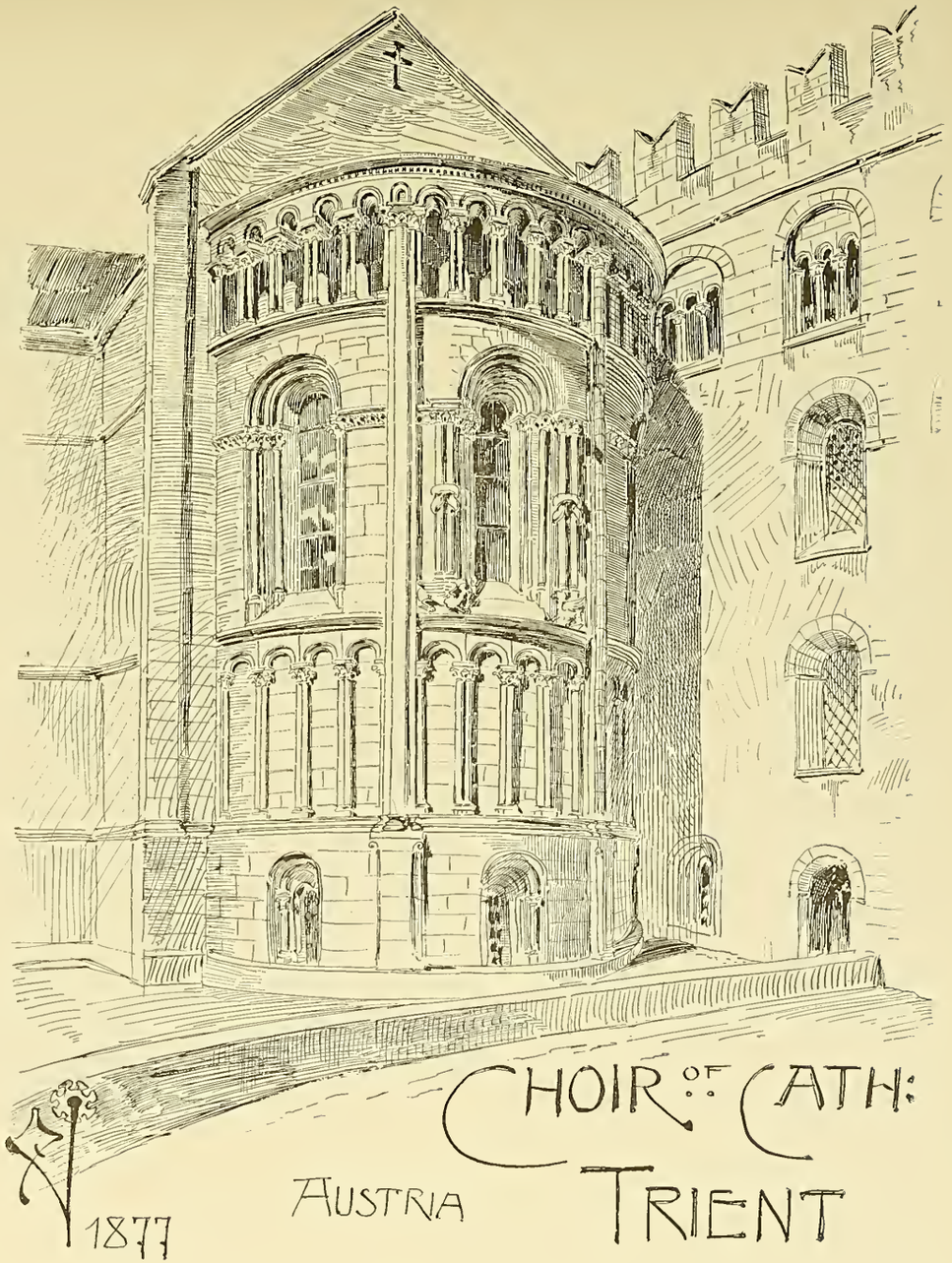


HOUSE OF THE CAPULETS

VERONA

DEL.

1887.



CHOIR OF CATH:

TRIENT

AUSTRIA

1877

APARTMENT BUILDING.
43RD ST. & GRAND BOUL. CHICAGO.
PATTON & FISHER. ARCHITECTS.



THE INLAND ARCHITECT AND NEWS RECORD

Vol. XXI. APRIL, 1893. No. 3



A Monthly Journal Devoted to

ARCHITECTURE,

CONSTRUCTION, DECORATION AND FURNISHING

IN THE WEST.

PUBLISHED BY THE INLAND PUBLISHING CO.,
19 Tribune Building, Chicago, Ill.

L. MULLER, Jr., Manager. ROBERT CRAIK McLEAN, Editor.
C. E. ILLSLEY, Associate Editor.

SPECIAL CONTRIBUTORS:

DANKMAR ADLER,	D. H. BURNHAM,	W. L. B JENNEY,
HENRY VAN BRUNT,	P. B. WIGHT,	IRVING K. POND,
WM. PAUL GERHARD,	LOUIS H. SULLIVAN,	ALLEN B. POND.

TERMS: Regular number, $5 a year; Photogravure edition, $10 a year. Single copies, Regular number, 50c.; Photogravure edition (including 7 photogravures), $1. Advance payment required.

The columns and illustration pages of THE INLAND ARCHITECT are open to all alike, merit and availability only determining what shall be published. Contributions appropriate to its pages are always desired.

AMERICAN INSTITUTE OF ARCHITECTS.

OFFICERS FOR 1893:

PRESIDENT . . . . EDWARD H. KENDALL, New York, N. Y.
SECRETARY . . . . ALFRED STONE, Providence, R. I.
TREASURER . . . . SAMUEL A. TREAT, Chicago, Ill.

VICE-PRESIDENTS:

FIRST VICE-PRESIDENT . . DANIEL H. BURNHAM, Chicago, Ill.
SECOND VICE-PRESIDENT . HENRY VAN BRUNT, Kansas City, Mo.

BOARD OF DIRECTORS:

For three years.

Theophilus P. Chandler, Jr., Phila., Pa.	Joseph F. Baumann, Knoxville, Tenn.
George W. Rapp, Cincinnati, Ohio.	P. P. Furber, St. Louis, Mo.
William G. Preston, Boston, Mass.	R. W. Gibson, New York, N. Y.
*W. W. Clay, Chicago, Ill.	C. H. Johnson, St. Paul, Minn.

For two years.

*Richard M. Hunt, New York, N. Y.	C. F. McKim, New York, N. Y.
E. M. Wheelwright, Boston, Mass.	William Worth Carlin, Buffalo, N. Y.
*James W. McLaughlin, Cincinnati, O.	S. S. Beman, Chicago, Ill.
William S. Eames, St. Louis, Mo.	William C. Smith, Nashville, Tenn.

For one year.

W. M. Poindexter, Washington, D. C.	*George B. Ferry, Milwaukee, Wis.
C. J. Clark, Louisville, Ky.	George C. Mason, Jr., Philadelphia.
Levi T. Scofield, Cleveland, Ohio.	E. F. Fassett, Portland, Me.
M. J. Dimmock, Richmond, Va.	A. W. Longfellow, Boston, Mass.

*These, with President, Secretary and Treasurer ex-officio, form Executive Committee.

STANDING COMMITTEES FOR 1893:

Committee on Foreign Correspondence.—Richard M. Hunt, chairman, New York, N. Y.; William Le Baron Jenney, Chicago, Ill.; R. S. Peabody, Boston, Mass.; C. F. McKim, New York, N. Y.; Henry Van Brunt, Kansas City, Mo.

Committee on Education.—Henry Van Brunt, chairman, Kansas City, Mo.; Professor William R. Ware, New York, N. Y.; Professor N. Clifford Ricker, Champaign, Ill.; A. W. Longfellow, Boston, Mass.; Theophilus P. Chandler, Jr., Philadelphia, Pa.

Committee on Uniform Contract.—Samuel A. Treat, chairman, Chicago, Ill.; William Worth Carlin, Buffalo, N. Y.; Alfred Stone, Providence, R. I.

Committee upon Conservation of Public Buildings.—Richard Upjohn, chairman, New York, N. Y., Presidents of the several Chapters.

Committee on Competition Code.—Charles E. Illsley, chairman, St. Louis, Mo.; J. W. Yost, Columbus, Ohio; J. G. Cutler, Rochester, N. Y.

Place of next Convention, Chicago, August, 1893.

Inexcusable Blunder by the Government.

Among the changes brought about by the political system under which the business of the United States is misconducted when a political party loses control, one lately made in the office of supervising architect is the most deplorable and fatal to the business interests involved in the prosecution of public work. The new supervising architect, Mr. Jeremiah O'Rourke, of New Jersey, is a gentleman of exceptional architectural learning, and one who, besides being a member of the American Institute of Architects, enjoys the respect of every member of the profession who is so fortunate as to have known him. But it is in the working department, that in which politics should never enter, that gross injustice as well as what will prove a most costly mistake has been made, and this is in the discharge of the assistant and chief clerk, Mr. H. C. McLean. We have no voice in politics and recognize no situation in the case but that of plain business and plain justice. Both, in the case of the summary discharge of this gentleman have been violated, and that in a manner that is probably unique even in the history of offices held under the patronage of a political party. Mr. McLean when a boy of fourteen was his father's (General G. W. McLean) secretary, and participated in the battle of Bull Run. Losing the support of his family, his father and eldest brother both losing their lives in the service, he was, through the recommendation of men whose names are national, appointed a page in the house. From this Mr. McLean was through successive congresses appointed to and creditably filled the offices of assistant superintendent of document room, subsequently becoming prompter of the speaker. Then, after serving as private secretary to George H. Pendleton, was appointed to a clerkship in the office of the third auditor of the treasury. In 1866 the then supervising architect, A. B. Mullet, and the United States treasurer, F. E. Spinner, simultaneously asked the secretary of the treasury that Mr. McLean be detailed to their respective departments. Mr. McLean selected that offered by the supervising architect, and to this date has filled every grade through successive promotions from charge of leases, bonds and contracts to that of chief of division of repairs. It took twenty years to work through these several divisions, and every promotion was governed by merit. No investigation of the many that have visited the office of the supervising architect has ever touched its chief clerk. The designing and construction of public buildings has for years been conducted upon a system which has given to the country the worst buildings in design in the world, and architects yearly petition congress to change this system. No greater argument can be found in favor of such change or stronger evidence of the thorough rottenness of the present system than this case, wherein we enter our protest, by which the only individual, living or dead, in the history of the department who has successively filled faithfully and well every position of trust in it, is relieved from his office without even the courtesy of time extended those who are discharged for cause. The supervising architect under the present system never designs; he can hardly sign the papers that come before him, and his ability or his removal does not affect the credit of the office; but with the removal of one

who has filled each successive position to the highest, and through the most important years of its existence, it is different, and the loss of such a servant in the building department of our government cannot be computed any more than it can be replaced, and those responsible for this blunder will not probably realize its enormity until too late to repair it.

United States Timber Test Work.

It is to be regretted that the house and senate of the last congress failed to act upon the proposed appropriation for the government timber test work. It is hoped that the coming session will take immediate and liberal action. It is a project in which all railroad engineers, architects and others are interested, and those who at the last session were so active in urging the matter upon their representatives and the committee on manufacturing, in whose hands the bill has lain for many months, will not cease their efforts, and that all the professions interested will urge upon their representatives the passage of the bill. This is the only way to secure this much-needed appropriation for the continuance of government tests in the Forestry Division.

Columbian Exposition Art and Architecture.

According to the programme which was outlined two years ago, the buildings for the reception and display of exhibits for the Columbian Exposition are finished and will be formally opened May 1. This means that the buildings are actually finished and that the landscape part of their ornamentation is only delayed for a week or two because the exceptionally prolonged cold weather has not permitted the improvement of the grounds till within the last few weeks. The exhibits are rapidly arriving and being placed, and while the opening day will find the buildings in a somewhat chaotic condition, this Exposition will probably surpass its predecessors in the matter of promptness of installation as well as in every other respect. It is to the Fine Arts department that the architect, after his survey of the structures themselves, will be especially attracted, and the extent and character of the fine arts display will be a surprise. Beginning with the buildings and approaching the Fair by water, as from that direction can the most effective view of the whole be obtained, those who have traveled abroad will be reminded of the approach to Venice. Each building will have its own attractiveness, but the Government building will be voted a blot upon the otherwise superb combination of architectural and landscape effects. In the art gallery is about 200,000 square feet of wall space, of which about 35,000 feet is devoted to America, 29,500 feet to France, and other foreign countries in proportion to their requirements. There will be a better, more comprehensive representation of the art of the world than ever before presented, and the discrimination to which all exhibits have been subjected will give to this display the best of French, English, German, Scandinavian, Russian, Dutch and Italian art, and also accord to the art of these countries a greater degree of recognition than ever before enjoyed. In the architectural section the first disappointment will be met. Here, where there should be found the largest expression of the art of arts, but a few and very insignificant representations can be found. Through some blunder of the committee in charge architects were not informed of the requirements until too late to be fitly represented, and the rules which drew a broad distinction between a painting of a building and a drawing would not admit of an exhibit except from a water-color artist's standpoint. Architecture as an art has been ignored. Perhaps not intentionally, but in effect. The committee of the Worlds' Congress Auxiliary, after months spent in trying to obtain a ruling by which their intended exhibit could be made, after finding that such an exhibit would have to be made independent of the Exposition, and that all expense attending the collection and shipment as well as a gallery for exhibition would have to be borne by the committee, decided that it was impossible to carry out the project in a creditable manner and it was abandoned. But the real architectural exhibit after all will be found in the buildings. The stupendous amount of work accomplished and the constructive problems involved, the design of each and the grouping of the whole, the sculpture that has at once marked an epoch in this art—all will give to the visiting architect the keenest enjoyment, the most practical knowledge that can be obtained by viewing the architectural creations of any land.

The World's Congress of Architects of 1893.

Final arrangements have been made whereby the great gathering of the architectural profession of the world may meet at Chicago during the Columbian Exposition, and exchange those experiences and comparison of methods that otherwise are only obtained through the architectural press. A great many difficulties have confronted the committee of the World's Congress Auxiliary, and one project, that of a large and comprehensive exhibit of architectural drawings and models, had to be abandoned; but the congress is an assured fact and will meet for the week commencing with July 31. The following circular letter has been sent out by the World's Congress Auxiliary of the Columbian Exposition, upon a congress of architects through its committee:

TO THE ARCHITECTS OF ALL COUNTRIES.

GREETING: Among the congresses to be held in Chicago during the Exposition season, under the auspices of the World's Congress Auxiliary, is an international congress of architects, to convene during the week commencing July 31, 1893, in the Permanent Memorial Art Palace, on the lake park front of Chicago, near the center of the city. The object of this congress is to bring together the eminent architects of all countries for friendly intercourse, comparison of methods and results, and the promotion of their mutual interests in the profession.

What is particularly desired from the leading architects of each country is a clear and graphic presentation of the progress, achievements and special lines of development in architecture. To this end the following subjects have been selected:

Workingmen's houses; modern apartment houses; ancient apartment houses; laundries in houses, health effect; kitchens in houses, health effect; modern stables, large and small; responsibility of architects in constructional matters; responsibility of architects as to plans; responsibility of architects in decorative matters; sculpture and architecture; painting and architecture; the client's right to service, as to drawings; ownership of same, specifications and details, as to supervision, etc.; mechanical engineering in architecture, and the architect's responsibility therefor; modern steel construction; fireproofing of building to date.

The above mentioned subjects will be presented by the most eminent architects of the world.

The World's Congress Auxiliary takes pleasure in extending to you a cordial invitation to attend this congress, and begs the favor of an early acceptance.

Address all communications to Robert Craik McLean, secretary, 19 Tribune building, Chicago. Very truly yours,

D. H. BURNHAM, Chairman.

It is essential that the members of the architectural societies organize under the direction of their presidents, who are members of the advisory council of the committee, and as far as possible see that each society and locality is fully represented. While many architects may not receive the committee's invitation, as the names of those belonging to architectural societies alone are obtainable, all architects of accredited standing will be welcome.

DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE.

BY CHARLES E. ILLSLEY, A.M., C.E., ARCHITECT.

CHAPTER III—ISOMETRIC DRAWING—*Continued.*

THE remaining illustrations in this chapter display the varied applicability of isometric drawing for constructive details. As was remarked on a previous page, these cuts were not made for publication, but are copies of actual working details employed in the erection of buildings. In general it is believed that they explain themselves.

Fig. 60 shows how beams hang in a wrought-iron stirrup from a flitch plate girder, and are tied together by a wrought-iron strap across the girder.

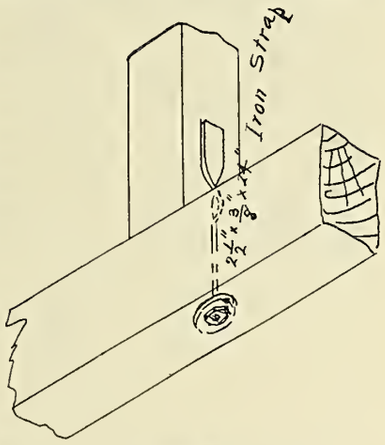


FIG. 59.

Figs. 61 to 64 inclusive show piers and cast-iron stools, pintles, etc., for a steam laundry, where it was desired that the foot of the posts should stand high enough above the floor to escape water, and where in the upper story the use of wooden bracing for stiffness was prohibited.

Figs. 65 and 66 show a new joint for the lower members of the diagonal rafters of a large "scissors truss" of a church roof. Fig. 67

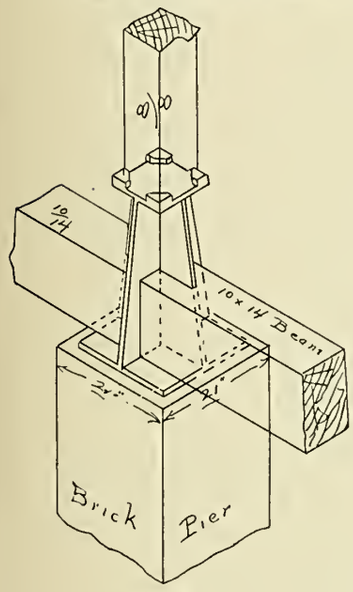


FIG. 61.

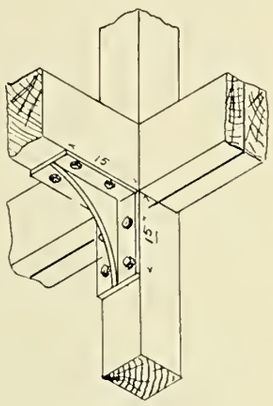


FIG. 62.

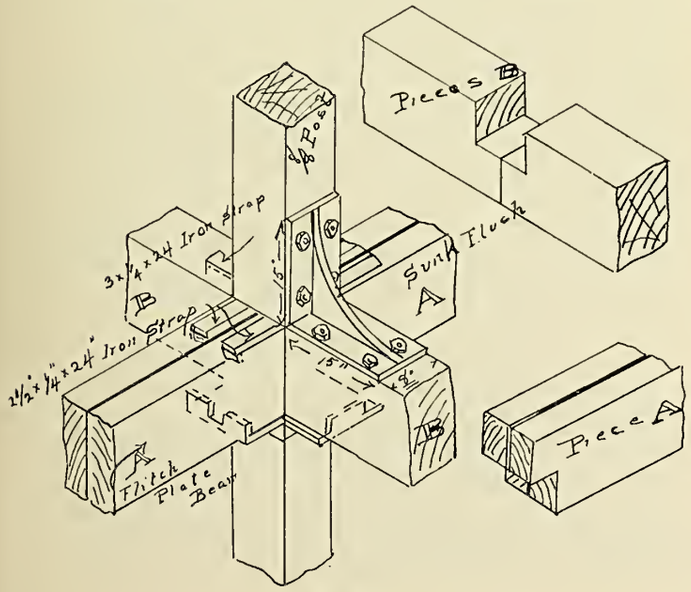


FIG. 63.

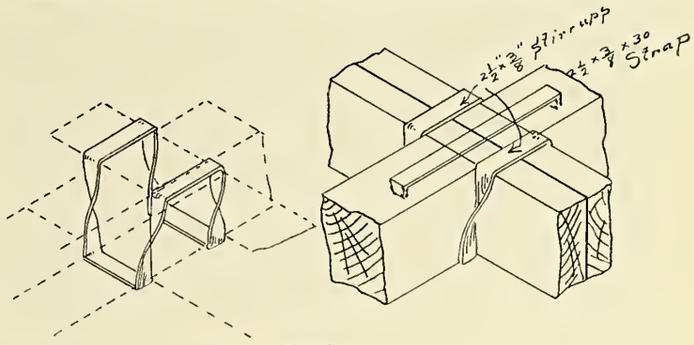


FIG. 60.

shows the same plan and elevation. Fig. 68 gives details for the transverse trusses of the same roof, shown in section by Fig. 69. Fig. 70 shows an old gallery in an old church, with a railing of gas pipe, to be curtained. Suspending rods from the roof run through every alternate standard of the railing.

CHAPTER IV.

THE ISOMETRIC CIRCLE.

52. A correct isometric circle may be drawn in any isometric square by the general method already described of first drawing the true circle with its inclosing square and transferring all points of this circle to its isometric projection by rectangular measurements, or what is geometrically known as abscissæ and ordinates along rectangular axes. In practice this is never done, since it is laborious and there is a short method of obtaining a four center curve of circular arcs which answers every necessary purpose.

53. Fig. 71 represents a horizontal isometric square, such as the top of a cube. As already explained, the four sides are equal and the angles at B and D are of one hundred and twenty degrees, while those at A and C are of sixty degrees. Hence the line B D, which bisects the angles at B and D, also bisects the isometric square, forming two equilateral triangles, A B D and B D C.

From B and D draw perpendiculars B a, B b, D c, D e, to the opposite sides. A line dropped from the vertex of an equilateral triangle perpendicular to its base bisects the base: hence a, b, c, e, are the middle points of their respective sides, and are therefore the points in which the inscribed circle will be tangent to these sides. Since B a, B b, are perpendicular to A D, C D, at their middle, B is the center and B a, B b, are radii of the required circular arc between a and b. In like manner D is the center for the corresponding arc c e. These radii intersect at f and g', which therefore become centers for circular arcs between a and c, and between b and e, connecting the arcs previously drawn.

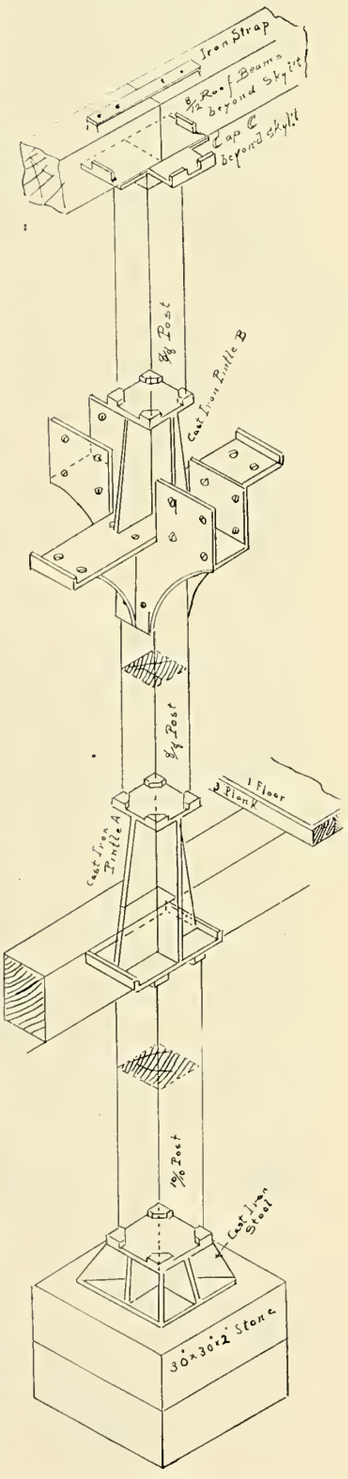


FIG. 64.

54. The compound curve thus obtained is accurately correct at the four tangent points a, b, c and e, and varies but slightly from the true isometric circle elsewhere. Hence we have our

RULE FOR DRAWING THE ISOMETRIC CIRCLE.

Construct the isometric circumscribing square, Fig. 71, and from the corners B and D of the obtuse angles draw lines B a, B to B c, D e, to the centers of the opposite sides. The intersections of these lines, f and g, are centers for the circular arcs a c and b e, while B and D are centers for the other arcs which close the curve.

Fig. 72 shows the application of this rule to all the sides of the isometric square.

55. In large drawings it may be inconvenient to construct the full isometric square, and often a part only of the isometric circle is required. It will be observed in Fig. 72 that a line e m, from the middle of B C, parallel with B E, bisects B G. The center G,

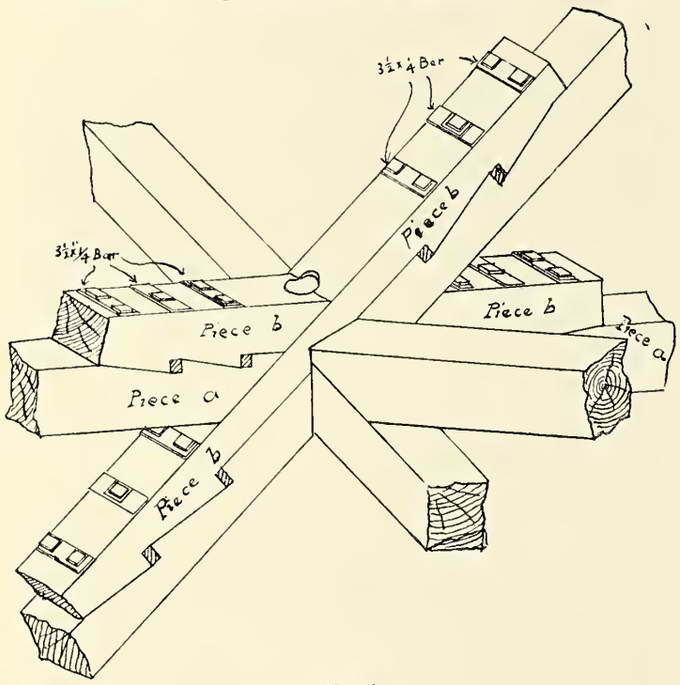


FIG. 65.

for the arc e h, may thus be found by drawing the indefinite line B G at an angle of sixty degrees with B E, and laying off m G equal to B m, the point *m* being the intersection with B G of the line e m, which represents the vertical from e, the middle of the span.

Fig. 73 gives an application of this method to the isometric drawing of the curved member of a roof truss, where only the quarter circle B C is to be shown. Draw A E, at sixty degrees

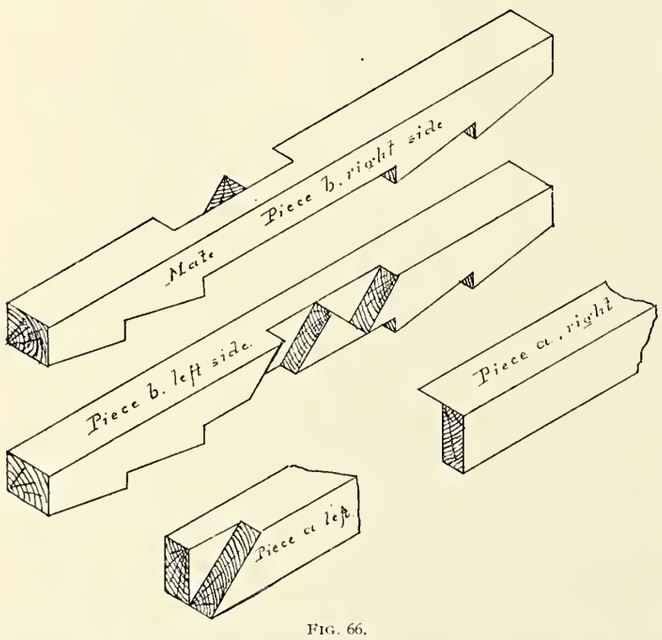


FIG. 66.

with A C. From B, the center of the span, drop the vertical B D. Lay off D E equal to A D. From E as a center describe the circular arc B C.

56. Figures 74 and 75 show reversed views of the pulpit arch of a church and the roof supports over the organ gallery. In Fig.

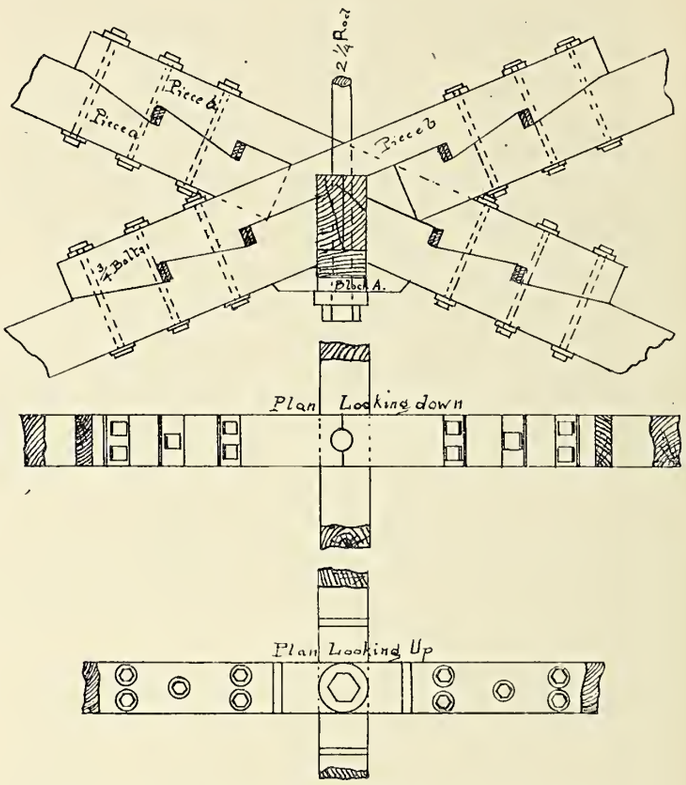


FIG. 67.

74 the half-circle is shown, and only so much of the isometric square has been drawn as was necessary to find the two centers a and d. The line A a bisects the sixty-degree angle B A C.

To find the center b for the arc starting at c, draw a b at sixty degrees with A B, and lay off a b to scale equal to the thickness of the pulpit wall.

In Fig. 76 no center for the isometric arc was within reach. The curve a e f g′ was obtained by rectangular measurements out, as a b, a c, a d (abscissæ) and heights b e, c f, and d g (ordinates) taken from the scale elevation of the truss.

(To be continued.)

A TALK ON ARCHITECTURE AT THE WORLD'S COLUMBIAN EXPOSITION.

BEFORE THE LAKE FOREST ART INSTITUTE, MARCH, 1893.

BY W. L. B. JENNEY, ARCHITECT.

THE earliest World's Fair was in London in 1851, which demonstrated conclusively that the bringing together of the industries and arts of the several nations in competitive exhibit was not only interesting but of practical benefit to all, teaching many a lesson not to be learned otherwise. These World's Exhibitions have become the rule.

Since then, we have had those of Dublin, 1852; New York, 1853; Paris, 1855; London, 1862; Paris, 1867; Vienna, 1873; Philadelphia, 1876; Paris, 1878; Sydney, 1879; Melbourne, 1880; Paris, 1889; all undoubtedly of general benefit, though in most cases the cost exceeded the receipts.

The one at Vienna, although intended to be finer than any precedent, was not well patronized by visitors. The daily attendance averaged only 18,800, due, it is thought, largely to the very high prices charged for accommodations and for everything a visitor might require, both without and within the grounds.

Paris, in 1889, was eminently a financial success, the receipts exceeding the expenditures by $1,600,000, and was of incalculable benefit to the city.

We have reason to expect great things for Chicago, for we have a finer and more extended site, a greater area of fine building, a much larger expenditure for the installment and for the entertainment of visitors, and in general more liberal accommodations than were ever offered before.

ARCHITECTURE AT THE EXPOSITION.

In the early beginning Mr. Root had been appointed supervising architect, Mr. Burnham chief of construction, and Olmstead & Co. landscape architects.

A general layout of grounds and buildings was prepared and then came the very important question, "How shall the architects for the Fair buildings be chosen?" The common way and the one that to the minds of the uninitiated would seem to be eminently fair and advantageous, is a general competition to which the architects of the United States should be invited, the building committee to be judge and jury. In practice this has proved to be the very worst method of choosing an architect that has ever

been invented. Certainly this has been universally true in this country. The cost of competitive designs is so great that architects in large and successful practice will not chip into the lottery, where the prizes are so few and the blanks so many, the thousand or more dollars that a set of competitive drawings must cost. It is, from a financial point, worse than the Louisiana lottery and not much better morally. An option on the board of trade is a far better investment.

From the side of the building committee, the result is no more promising. They will get few if any designs, unless they promise to pay for them, from the men to whom they would be willing to trust the work, and it is safe to say that not even one design will be presented that can be executed without very material alterations. Such must of necessity be the case, for in a general competition there cannot be that free interchange of ideas between architect and directors that is so very essential to the production of anything the directors will accept. Competitions invariably result in a disagreeable, vexatious wrangle, unprofitable to all concerned, ending, after much waste of time and money, just where it began, with the momentous question, "Who shall be appointed architect?" still unanswered.

Fortunately the Exposition Committee on Buildings and Grounds were men of experience and soon agreed upon the very best method of choosing their architects, which was to select the ten men they thought would serve them best, five to be chosen from among the Chicago architects and five elsewhere in the United States; these ten architects to form a committee of the whole and each to be assigned a special building. The results have proved the wisdom of the method. Not by any means can it be stated that each of the ten architects could not easily have been replaced by others who would have done quite as well or even better, but it can be asserted and proved that the method led to very satisfactory results, and that the Committee on Buildings and Grounds have paid the highest compliments to the professions of architecture, sculpture and painting, and have given them opportunities that they never enjoyed before in this country. Too much can scarcely be said in praise of the actions of this committee. They have been dignified, appreciative, liberal and eminently practical.

As soon as convenient after their appointments, the ten architects, the landscape architects, and Mr. St. Gaudens to represent the sculptors, met in Chicago. The general problems of the design of the grounds and the location and approximate size of the several buildings were discussed. There has been but little departure from the general plan then agreed upon. Then the style of the architecture, the question of domes, general height of the side walls, etc., was all discussed and an agreement reached that all should follow as far as the special requirements of the different buildings would admit. About a week was spent on this work and then the committee adjourned to meet again as soon as the architects could prepare the preliminary studies.

Again they met and each in his turn explained his design, a general discussion ensued, criticisms were freely given, but all in the pleasantest and most friendly way, and when that meeting adjourned, each of the ten architects felt that he had profited by the advice of the other nine and that his special building would be better therefor.

There have been other meetings from time to time, held both in Chicago and New York, to decide upon such general questions as use of sculpture and the appointment of sculptors, the coloring, the painted decorations and the selections of painters. In all these meetings and in all these discussions, only the pleasantest feelings have obtained and not in a single instance has anything occurred to mar that spirit of good fellowship that has existed from the first.

Although each architect is responsible to a large degree for his individual building, the general effect of the whole, the grounds, the buildings and the great features of their adornments, is the work of the joint committee of architects, landscape architects and sculptors. In all this work, both general and special, Mr. Burnham, Director of the Works, gave his willing coöperation.

For the first time in America have the architects had the assistance of the sculptors to embellish their buildings. Heretofore, except in some rare instances, the architects have not dared to count upon even a bas relief, or two or three groups, feeling that they would probably be omitted, or worse, given to some cheap man, but at the Fair buildings the best sculptors in America have lent their assistance. This sculpture is where the architects designed it to be placed. It is not only beautiful in itself, but it is designed in the true spirit of the architecture it embellishes, and becomes a part thereof. For example, the two groups by Lorado Taft on either side of the main entrance to the Horticultural building, "The Awakening" and "The Sleep of the Flowers," are as much a part of that entrance pavilion as the columns or the arch moldings.

One word on the construction of the Fair buildings. They are to last but a single summer, but to be ready for that summer they must stand the severe trial of a Chicago winter. They must be handsome, elegant, effective and richly decorated in holiday attire, and yet must be comparatively cheap and quickly constructed. To this end, a rough frame construction on pile or wooden crib foundations, as the case required, and then the entire exterior walls covered with staff. All the columns, moldings and the sculpture made of this same material.

Staff is of foreign invention. It has been used in Italy for centuries. The best staff for use in Chicago in such buildings is composed of one part best Portland cement and five parts plaster of Paris, to which enough long hemp fiber is added to bind it thoroughly together. This is cast in molds, or plastered onto laths, the same as ordinary plaster is put onto the interior of our houses. In cold weather it must all be cast, even the plain surfaces, and when thoroughly dry it is nailed onto the building and the joints and nail holes pointed with same material. Then it must have a coat or two of linseed oil or good oil paint to protect it from the weather. If of good material and well made and protected by paint, it should last many years; by omitting the plaster and using only good Portland cement mortar, it can be made as enduring as our cement sidewalks, and can be used for permanent buildings.

The lessons taught by the architecture of the World's Fair are valuable and will improve the architecture of Chicago. They may be briefly enumerated as dignity — repose — adaptability to the requirements. A style once adopted must be preserved. A careful study of precedents. Regard for proportions as a whole and in the several parts and in details. More attention to the best adaptations of the classic to modern requirements or what is usually termed the Renaissance of the different schools — French, Italian, Spanish, etc., and above all, it can teach the valuable lesson that good work requires the most serious and careful study, even of those who have had a thorough preliminary training and long and successful practice. The architects must give the most careful supervision to the work of their office, however able their assistants. In this connection, the example from the United States government calls attention in a striking manner to the wrong policy of calling upon a supervising architect employed at a comparatively small salary by the Treasury Department, to furnish designs and attend to the enormous amount of office work for all the numerous great and important public buildings that this country has yearly under contract; that the results are decidedly inferior to what could be obtained by a proper selection from the architects of the country, is being repeatedly brought to the attention of congress. Again in this connection we might cite as another example of how not to do it, the Chicago postoffice.

The World's Columbian Exposition is a grand object lesson in its architecture as well as in its exhibits. It is now generally admitted that object lessons, in the broadest and best sense, are the most impressive, the most efficient, the quickest and the easiest learned.

Chicago should be the first to profit by these teachings, and because a greater proportion of the inhabitants of Chicago, men, women and children, can see the Exposition than of other cities, Chicago should reap the greatest profit. The thought, the labor and the money that has expended has been well spent and will bring forth large and lasting returns.

The talk was illustrated by about sixty lantern slides, with explanations and remarks.

HEATING AND VENTILATION OF RESIDENCES.*

BY JAMES R. WILLETT.

Copyrighted by the author, 1893.

YOUNG GENTLEMEN,—I have been invited to speak to you on the subject of heating and ventilation, in its practical applications. The theory of the subject, I presume you have been, or will be, instructed upon by others. My purpose is to show you the way in which a person engaged in such business may prepare designs for execution.

Many years ago, long before you young gentlemen were born, a young architect had prepared designs for a residence, and had acquitted himself to his entire satisfaction; and, as he thought, to the satisfaction of the owner. One day, when the building was nearly completed, the owner asked the architect, "What size furnace would you use in the house?" For in that day, heating by hot water and steam, at least as applied to residences, was uncommon. The young architect could not answer the question, for he knew nothing about it. However, he said he would consider the matter, and in that way postponed the decision.

How was he to ascertain the proper size for the furnace? He could find books on the subject of heating and ventilation, but they did not enable him to arrive at a prompt and definite answer to the question asked.

The young architect at last found that the only way to acquire knowledge on the subject was to go to the contractors who were engaged in putting up furnaces. After acquiring all the information he could from them, comparing their statements, etc., he arrived at a conclusion which he gave to the owner in, perhaps, a somewhat oracular manner.

The statements made by the furnace men did not, in many instances, agree. Each man was, of course, interested in the sale of some particular furnace. They possessed a large amount of information derived from actual work, and they carried on the work largely by their "judgment." The only rule which appeared to be general was: They would take the volume of the building, and they knew, from previous experience, about such a size furnace would be sufficient for such a building. The experience they had acquired was very valuable, but it was not digested and arranged so that general rules could be deduced and applied to other buildings.

We propose to give "office" rules—that is, such rules as can be promptly and readily applied in making out designs and specifications for such work. It is to be understood that these rules are

*Address delivered to the engineering societies of the University of Illinois, March 23, 1893. From advance sheets of the "Technograph," published by the engineering societies of the university, Champaign, Illinois.

approximate only. But they are sufficiently correct for practice, as experience has shown. Every practitioner has such rules, must have such rules, and every practitioner who has written on the subject has given such rules. The endeavor has been made to give rules so that the field for judgment will be limited, and to prevent grievous errors from being made; but judgment in the use of these rules is required. No rules can be made on any subject that do not require the use of the judgment in their application.

There are many methods or systems of heating and ventilation. There is no one that is, under any and all circumstances, superior to every other. This lecture will be confined to the heating and ventilation of ordinary residences in a simple manner. There are several reasons for this; one is that you must creep before you walk. If a young architect will master the lower walks of a subject, he will be afterward much better fitted to comprehend the higher branches of it. Besides the time allotted to this lecture will not admit of an extensive treatment.

Any residence which has a heating apparatus designed to be run in the best manner, and requiring thorough and constant attention, will be more or less of a failure. The boilers in an ordinary residence are usually run by the owner of the house, by a servant girl, or at best by a coachman whose time and attention is mostly occupied with other duties, and who looks upon the necessity of attending to the heating apparatus as an infliction and a burden; therefore, it is essential that in designing a heating apparatus for a residence, it shall be capable of working satisfactorily under some amount of neglect and misuse. This neglect is contemplated and allowed for in the statements hereinafter made.

The method of heating a building should be decided upon before the plans for the building are finished, as the method of heating affects, or should affect, both the plans and construction of the building.

VENTILATION.

To make a proper design for ventilation, it is necessary to know or to assume:

The number of persons who are to inhabit the house.

The fresh air that should be allowed to each person. This is put down by some authors as high as 2,000 cubic feet per person per hour, and even higher.

The quantity of air necessary to provide for the vitiation of the air by gas or other lights.

How can anyone tell what number of persons will occupy a residence and for how many hours per day? How often will the number of persons change? How many lights will be kept burning, and for how many hours will they burn? How much air will leak into the house or be forced in by the winds outside?

All of these questions are somewhat in the nature of conundrums. In the same residence the data will vary from day to day.

We must assume a certain data, depending upon the style of the house, the class of people who occupy it, etc.

It may be assumed that there will be two persons occupying each bedroom; and the number of bedrooms multiplied by 2 may be taken as the total number of persons to be provided for.

As to the lighting, that is even more uncertain than the number of persons in the house. It may be assumed as one burner per person. The number of hours that the lights are burning will probably not exceed six hours out of the twenty-four. Indeed; all the lights will not probably burn that long, and four hours out of the twenty-four may be sufficient, but we will consider them as burning six hours out of the twenty-four.

The air required for the vitiation by gas lights is given by Schumann as 1,800 cubic feet per hour for each cubic foot of gas burned. As each burner may be taken to burn four cubic feet of gas per hour, then each light would require 7,200 cubic feet per hour. This is, however, for but six hours out of the twenty-four. If then it be assumed that a burner will burn six hours, and distribute it over the twenty-four hours, it will give 1,800 cubic feet per hour. Adding 2,000 cubic feet, the quantity required for the use of each person, to 1,800 cubic feet, the quantity required per person for the consumption of one burner of gas, gives a total of 3,800 cubic feet of fresh air required for personal use, together with gas consumption, per person, per hour.

If we assume the velocity of the air entering the fresh-air duct at six feet per second, and it is usually as much as that, if the rules hereinafter given are complied with; then to give 3,800 cubic feet of air per person per hour will require a cross sectional area in the fresh-air duct of 25.4 square inches per person, or say 25 square inches per person.

The question of the leakage of the air into the building is a very considerable one. The more leakage there is, the less area will be required in the fresh-air duct (and vice versa to some extent). In the very best built houses the leakage is always large. There is no way of ascertaining its amount, but it is thought fair to assume that not less than one-fifth the volume of air that will be required in the house is furnished by leakage; and when a strong wind is prevailing it may be much more. It is true that there is leakage out of the house as well as into it; but the leakage out of the house is less than into it, because the outward leakage must pass through two walls instead of one and because the heating of the house draws air to it. It is thought that the difference will amount to one-fifth, as above stated.

If we take then one-fifth of the fresh air as furnished by leakage it will reduce the area of the fresh-air duct to twenty square inches per person. It is not advisable to make the area of fresh-air duct smaller than this and it is much better to make it larger, provided always that the radiator, or warming, surface for heating the fresh air, is increased in the same ratio, for if the incoming air is cold it will be shut off.

The foregoing can be condensed to—

$$\text{Area of fresh-air inlet in square inches,} = 40 \left\{ \begin{array}{l} \text{Number of bedrooms in} \\ \text{residence.} \end{array} \right.$$

On a windy and cold day, it may be found that it is impracticable to keep the house warm with the fresh-air duct fully open. Or, even if it could be kept open, the consumption of coal would be such that the owner would not incur the necessary expense.

Here it may be remarked, that the question as to how the owner is likely to act under certain circumstances is one that the practicing architect should take into consideration.

If the fresh-air inlet is large, and owing thereto, the house either becomes cold, or the amount of coal used is, in the judgment of the owner, excessive, it is practically certain that he will shut the fresh-air inlet up; probably shut it up altogether, and thereby deprive the house of all fresh air except what it may obtain through leakage. Long and continuous experience has shown this to be the case. Whereas, if there is a means of closing the fresh-air inlet to some extent, but not altogether, the owner is likely to so close it. This will, of course, decrease the supply of air, but it is better to decrease the supply of air than to altogether stop it.

It is well, therefore, to provide a damper in the fresh-air inlet. This damper, however, should not close the inlet wholly; say one-third of the damper should be cut off.

If the damper is thus arranged and the proportions given in the rules observed, the supply of fresh air will still be equal to 1,200 cubic feet per person per hour. Indeed, it will be more, since the leakage will not be diminished, but rather increased. Besides, when the wind is blowing hard the velocity in the fresh-air duct will be increased.

The volume of air in cubic feet that will pass through a duct of any cross sectional area, with air moving at any velocity, can be found by recollecting that a duct of 1 inch cross sectional area, with air moving at a velocity of 1 foot per second, will pass 25 cubic feet of air per hour. If, therefore, 25 be multiplied by the cross sectional area of any duct, in square inches, and also by the velocity in feet per second, the product will be the quantity of air in cubic feet per hour that said duct will pass.

Example: What volume of air moving at 8 feet per second will pass through a duct having a sectional area of 113 square inches, in one hour, $25 \times 8 \times 113 = 22{,}600$ cubic feet.

The opening of the fresh-air inlet should be upon the side of the house against which the prevailing cold winds blow. (This means, in the vicinity of Chicago, first the north side and next the west side.) The openings should not be exposed to the direct force of the wind. If there are no buildings, fences or other obstructions close by to prevent the wind from striking the opening directly, then some shield should be erected to do so. There should be but one opening to the fresh-air inlet; but if there are two boilers or furnaces to the house, then the opening to the fresh-air inlet to each should be on the same side of the house.

If there be fresh-air inlets on the different sides of the house, it is not at all unlikely that the fresh air will at times be driven in one inlet through the radiators or furnace, through the house and out of the other supposed fresh-air inlet.

The fresh-air duct should not be taken under the basement floor, where it is liable to fill up from flooding of sewers, dirt, dead rats and other filth; but it should be kept above the ground, brought along the basement ceiling until it reaches the proper point and then, but not till then (turning down if necessary), enter the bottom of the indirect radiator casing, or furnace.

All incoming fresh air must be heated by indirect radiator, or by the furnace.

The hot-air flues to rooms will be spoken of when speaking of indirect radiation hereafter.

The outlet flues through which air passes out of a room, and out of the building, should be of brick, similar to smoke flues, though they are sometimes made of tin. Every room should have such a flue. The opening from a room into outlet flue should be close to the floor, in, or just above, the baseboard. This opening should have a register. This register should be rather small than large, for if large outlet registers are used some of them are apt to become air inlets instead of air outlets—that is, some are apt to "draw downward," as it is termed, instead of upward.

A general rule for such an outlet register may be taken as follows:

For first-story rooms: Divide the volume of the room in cubic feet by 30 and the quotient will be the gross area of the outlet register in square inches.

For second-story rooms: Divide by 40.

For third-story rooms: Divide by 50.

The outlet register should not be much greater than called for by the above rule unless the fresh-air duct is enlarged.

The sum of the gross area of the outlet flues should not exceed 1¼ the area of fresh-air inlet duct. If it does, then either they should be reduced or the fresh-air inlet duct enlarged. The latter is best.

The fresh-air entrance to inlet duct should be covered with wire netting to keep out dust, etc., and this entrance should have at least twice the area of the inlet duct with which it connects, as the wire netting diminishes the supply of air. If this area cannot be had it is better to leave off the netting.

The rules given are based on fresh heated air being admitted to the house through an indirect radiator. If indirect radiation is

not put in, then the direct radiation should be increased by one-half (or more) of the indirect radiation.

HEATING.

Residences are heated in three different ways:

By hot-air furnaces;

By steam apparatus;

By hot-water apparatus.

How shall a residence be heated? This is a question which is largely determined by the owner; usually on the score of expense. The cost of the heating apparatus may be taken in the following order: The furnace is the cheapest, the steam above that, and the hot-water apparatus usually costing the most.

The buildings that are usually planned by an architect are not nowadays often heated by furnace. Nevertheless, most of the residences throughout the country that have any heating apparatus, are heated by furnace, and the young architect should know something about them.

In hot-water heating the air is often exposed to a temperature of but 100 degrees Fahr., and is not likely to be over 180 degrees. The temperature of the water is practically never above 212 degrees, and usually not more than 150 degrees.

In steam heating the air comes in contact with a surface which is not usually below 212 degrees Fahr., while it is often much higher, the air being exposed to a temperature which is seldom less than 200 degrees and often as high as 300 degrees.

In hot-air furnace heating the method of heating is altogether what is termed the indirect system of heating. The incoming fresh air comes in contact with a surface highly heated. It is liable to be exposed to a surface which may have a temperature as high as 600 degrees, and which often has a temperature of 400 degrees.

The air which we breathe is full of particles of dust. Now, when this air comes in contact with a heated surface, such as it may do in a hot-air furnace, the dust is burned; and the air perhaps otherwise injured and rendered unfit for breathing. In heating by steam, the same thing may occur, but in a very much less degree. But in the open system of hot-water heating, it is practically impossible to run the temperature over 200 degrees, and it ordinarily does not exceed 160 degrees. In heating by steam, you cannot make steam at all without bringing the temperature to the boiling point of water (212 degrees) and therefore the temperature of the radiators must be nearly that height. Now, this may be too high for mild weather.

In the "open" method of hot-water heating you cannot raise the temperature above 200 degrees, and therefore you cannot burn the air; and you can regulate the heat to any lower temperature you desire, down to the temperature out of doors. These are the great advantages the hot-water heating system possesses.

In the selection of heating apparatus for residences preference should be given in the following order: First, hot-water; second, steam; third, hot-air furnace.

While the above is true, yet it is better to have a good apparatus of an inferior type than a poor apparatus of a superior type. A residence can be heated and well warmed by any of them, when the apparatus is well designed.

Whatever system may be adopted, the following data are needed for each room to be heated: Volume in cubic feet; exterior wall surface in square feet; exterior windows and exterior doors in square feet.

In measuring exterior wall surface, include the window and the door areas. In measuring windows (and doors) measure between the inside of jambs, that is include width of sash. This is to compensate for leakage of air. The exterior doors are treated as if they were windows in order to compensate for the air leakage during the opening and shutting thereof, etc.

Proceed by finding the value of R for each room according to the following formula:

I=Inside temperature desired Fahrenheit, usually 70 degrees.

E=Exterior temperature.

V=Volume of the room in cubic feet.

W=Exterior wall surface of the room in square feet.

G=Exterior windows and exterior doors in square feet.

R=Standard amount of surface of radiator in square feet.

$$\left(\frac{V}{400} + \frac{W}{10} + \frac{G}{2}\right)\left(\frac{I-E}{I}\right) 0.9 = R$$

In considering the exterior temperature it is not necessary to assume the very lowest that has occurred. Such extreme temperatures usually last but a short time, and any full sized apparatus will bear pushing occasionally. If the lowest temperature is increased by ten degrees the result may be assumed as the exterior temperature. In Chicago the exterior temperature is usually assumed as —10 degrees, although it sometimes has gone down to —20 degrees and even lower.

The portion of the equation, $0.9\left(\frac{I-E}{I}\right)$ may be reduced to a constant for any particular place. "I" being taken as 70 degrees Fahr., and "E" as 10 degrees higher than the minimum temperature. It is convenient to have these constants, and they are given in Table I hereinafter.

In places where the minimum temperature is above zero, residences are not usually heated by apparatus, but by grates.

For the proper amount of direct radiator surface in square feet necessary to be used in a room, use the following formula:

Q=R F J.

Where Q=Desired square feet direct radiator surface for a room.

R=Standard surface of radiator in square feet for a room calculated as heretofore given.

F=Factor depending on method of heating, or on particular story, etc.

J=Factor depending on exposure, etc.

If the house is to be heated by indirect radiation there must be hot-air flues provided to reach rooms in upper stories.

The tendency nowadays appears to be in the first story of residences to throw the rooms together by having large openings between themselves and the stair hall without doors. The wall space in the first story is thus reduced to a small amount. It is difficult to find room in it to contain the hot-air flues.

You have flues in the building, very large flues, sometimes more than one of them. It is true they are not called flues, but nevertheless they are flues, and, unless you need to throw a small amount of very hot air into a room, you can do away with the small hot-air flues and use the large flues already provided. These large flues are called stair halls. They have several advantages over the small flues. They can deliver a large volume of air at a velocity so slow as to be inappreciable. The air need not be heated up above a low temperature, say 80 or 90 degrees Fahr. In rooms where there are openings without doors, the air can pass. Where there are doors the air can enter by means of a low transom over the door.

One of the difficulties of heating by the indirect system of small flues is the fact that the large flue, known as the stair hall, is frequently working at cross purposes with the small hot-air flues. On a windy day it is certainly difficult to thoroughly heat, by the indirect system alone, that side of the house exposed to a gale. The exclusive use of the indirect system is not necessary for ordinary residences. The best result is obtained by a combination. With direct radiators for the warming of the room and with indirect radiators for the warming of the necessary incoming fresh air.

By direct radiation is meant that radiators are to be placed in the room which is to be heated. By indirect radiation, that radiators heat air and then this heated air is passed into the room.

Usually indirect radiators are placed in the basement just below the ceiling. This brings the bottom of the radiator down low compared with the boiler. Now the higher the radiators are above the boiler the better.

A radiator has been introduced in late years which is termed the direct-indirect. This radiator, to all appearances, is a direct radiator, but the sides are partially closed in and a fresh-air duct is brought below it from which fresh air is received, and passed up through the radiator. This direct-indirect radiator can be placed on (and above) the first floor, and is well above the boiler which is usually placed in the basement, therefore it works better than if lower down. The opening in the floor through which the air passes up is covered by the radiator. We consider this radiator preferable to the old (or basement) indirect radiator.

The indirect system of radiation permits of ventilation, at least requires the circulation of air both in and out of a room, whereas the direct system causes the air already in the room to circulate in it, and does not require the introduction of air from outside of the room. Each system has its own benefits and its disadvantages. The indirect system makes it difficult at times to heat some of the rooms which are exposed to prevailing winds, and has been known to act in a reverse manner, driving the air in the upcast flue, or what is intended for such, downward. Furthermore, the quantity of heat necessary to warm the room depends upon the amount of air introduced at the proper temperature. Now, the quantity of air required for ventilation and that required to carry the necessary amount of heat, are not usually similar. The requirements of heating and of ventilating usually clash and one or the other must be, to a more or less degree, sacrificed.

The indirect radiators should not have any valves upon them. If any heat at all is needed they should be in operation; besides, as they are exposed to the incoming fresh cold air, they are very liable to freeze up if the flow of steam or hot water is stopped.

In the direct system, the radiators being in the room to be heated, the question of the quantity of air introduced, so far as the warming of the room is concerned, nearly disappears, and a direct radiation can be proportioned to the necessary amount required to warm the room and to warm it only, while the ventilating of it can be treated separately and apart.

In large, expensive buildings there are sometimes built hot-air flues to each room, and if the building is to be heated solely by indirect radiation this is imperative; but if the rooms are already heated by direct radiation it is only necessary to heat the incoming fresh air that is required for ventilation, and this brings the amount of indirect radiation required to a small amount compared with the amount of air required when heated exclusively by indirect radiation; besides it is very difficult to obtain sufficient room within the walls to carry up hot-air flues to the rooms in the upper stories, as the upper story rooms are usually smaller and more numerous than those in the first story.

The best place for a direct radiator is under the window sills. Now this requires a low radiator, while the tendency is nowadays to lower window sills. We would recommend that direct radiators not exceeding twenty-three or twenty-four inches high from the the floor be used. In designing a house the window sills should be kept not less than twenty-six inches from the floor. With low radiators they usually need to be long in order to make the requisite heating surface; this should also be looked after. It is well to keep this matter in mind in designing a building, and make your windows either wide or twin or triple windows, which afford room for the requisite length of radiators. It is not desirable usually to

extend the radiators beyond the window, at least the ladies particularly object to it. If you cannot place the direct radiators under the window sills, then place them against exterior wall or as near as is practicable. If you heat the exposed sides of a room you will heat the whole of it.

Considerable trouble sometimes arises from the objections of the owners, and especially their wives, in placing the radiators, and sometimes practically objecting to radiators at all, or else putting them in such places as will not allow sufficient size of radiator to be put in. The difficulty is increased by the fact that they want the radiators low down. Less objection is usually made to a low radiator than to a high one; but a low radiator requires a greater length than a high one for the same amount of radiator surface.

Some owners object to giving any sufficient space for a heating apparatus, and architects do not usually make proper and sufficient provision therefor.

The direct-indirect radiators should be the highest made (45 inches) so as to give ample radiator surface to heat the incoming fresh air and to take up as little floor space as is possible. Do not place them under windows, but in an unoccupied place in stair hall.

It is usually best to consider the first and second story stair halls as one first-story room, and treat it accordingly. Where the second-story hall is large, or much exposed, then a minor portion of the radiation may be put in second story, otherwise put it all in first story.

Some years ago the manufacturers were very apt to overrate the surface in the radiators. This is not so much the case now, except with radiators which have what is termed extended surfaces, that is, solid projections on radiators. Now, while it may be admitted that these projections are of some value, they are not nearly so valuable as is claimed for them. It is not known how valuable they are, but they are of no very great value and the only safe way is not to consider them at all. There is no mystery about measuring a radiator and the surface it contains. You can measure it with a tape line as you can measure any other surface.

Given sizes of pipe refer to their interior diameters. Boiler tubes are given by their exterior diameters. Although strictly speaking they may be a pipe, they are never called so.

There are various plans of boilers, both of wrought and of cast iron. Unless it is a very large residence it is usual to adopt some style of boiler already made and intended for house heating; they are usually of cast iron. There are a number of good ones, and it can only be said that you must use your best judgment in selecting the boiler you wish to adopt.

There should be some relation between the grate area and the surface of boiler exposed to the fire. The heat all comes from the coal which is burned on the grate. If you have your furnace large enough for thorough combustion the heating surface is apt to be sufficient. It is usual to have the heating surface fifteen times the grate area; but the surface in the boiler directly exposed to the fire is much more valuable for heating purposes than the surface of passages which are not exposed to the fire, but only to the smoke.

There is such a thing as getting your boiler too complicated. It is indispensable that all parts of your boiler can be readily gotten at and cleaned out.

Anthracite coal is almost universally used for heating house boilers east of the Mississippi river, and it is assumed that that fuel is to be used.

If the house is a large one, it may be better to use a wrought iron or steel boiler. For residence use, where the dimensions are sufficiently large to require such a boiler, perhaps what is known as the "saddle" and the "fire box" or "locomotive boiler" are the best.

Having ascertained the total square feet of radiation the required square inches of grate area can be taken from Table II hereinafter given.

Each heating apparatus should have an automatic temperature regulator on it. It adds to the comfort and saves fuel. There are various kinds of them, some of them are worked by electricity.

It is well to put a pop safety valve on all boilers, although it is not absolutely necessary with the open method of hot-water heating. A one-inch pop safety valve is usually sufficient.

A steam boiler must have a safety valve and pressure gauge.

The boiler grate should give facilities for the removal of clinkers.

In all heating apparatus containing water, provision should be made for emptying same by means of waste cocks which are placed at the lowest point of the apparatus and the water run off to sewer or other suitable place.

The size of the brick smoke flue, that is, its cross sectional area, should be one-fifth of the grate area. None should be less than 12 by 12 inches, and it is better to make them larger, make it 16 by 16 inches if practicable; this will be large enough for an ordinary residence. 12 by 16 inches is usually a fair size.

Some authors say that a flue may be too large. My experience is the other way, even with smoke stacks ten feet square inside.

Some cast-iron boilers have a small smoke outlet. This is a defect. In such cases it is all the more necessary to have a full size brick flue.

(To be continued.)

MOSAIC.

Mr. Ulysses G. Orr, formerly of the firm of Percival & Orr, architects, has opened an office for himself at 31 Builders' Exchange, Buffalo, New York.

UNITED STATES TIMBER TEST WORK.

Although all the leading railroad engineers, architects, professors of engineering and others interested in the timber tests had flooded with hundreds of letters their representatives and senators and the committee on manufacturing, in whose hands the special appropriation for the work was pigeon-holed, neither the committee nor the house paid any attention to this expression of public interest. The senate, however, realized that there was value in the work and sincerity in its indorsers and increased the appropriations for the Forestry Division by $8,000, that is twenty per cent of the amount asked and considered by those in charge as necessary to continue the work on a proper business basis.

Under the circumstances, the testing will be discontinued until after July, when the new appropriations become available and then proceed at the slow pace which congress has set.

Although the result of the efforts of those who took active interest in securing appropriations for the work were not crowned with that success which they deserved, this is the only proper method of influencing legislation, and those interested in the investigation should not fail to move again when the new congress assembles.

The first compilation of test results is now in the hands of the printer and will probably be issued within six or eight weeks as "Bulletin 8, Timber Physics, Part II." It will contain the results obtained on Longleaf pine and will especially discuss in detail the results of tests and examinations of bled and unbled timber, results which in themselves justify the expenditure by the government of money on such work.

The Forestry Division will exhibit the methods pursued in this work at the World's Fair, which will be of interest, since nowhere in the world has such comprehensive and systematic investigation of timbers been ever devised. The working plans for a similar undertaking by the Prussian government have only just been perfected.

Another exhibit of interest to railroad engineers and those interested in reducing forest waste will be a collection of the most approved types of metal railroad ties.

COST TO SEE THE COLUMBIAN EXPOSITION.

In answer to a question that is asked by people all over the world, "What will it cost to see the World's Fair?" the Chicago *Tribune* has carefully compiled figures from which an abstract is taken.

As the Exposition grounds cover 700 acres containing fifty-two exposition and state buildings, besides those of foreign nations, the live stock exhibit and a number of exhibits which are outside, such as Esquimau and other villages, which may be termed side-shows, twenty-one in number, it is not probable that one person can cover the ground in a day. Supposing he can, the itemized account is as follows:

Admission to Exposition grounds	$ .50
" to side-shows	5.25
Ride on electric boat	.25
" elevated railway	.10
" sliding railway	.10
" ice railway	.10
Luncheon	.50
Round-trip fare from the city by rail or water	.25
Total	$7.05

This shows the total expense, though the general sightseer would only go through the Exposition buildings for which his 50 cents admission pays. This would make the cost for ten days, including everything, $18.30.

Following in detail and on the economical basis, the question of cost can safely and satisfactorily be answered for the benefit of the rich and poor alike who anticipate coming to the Fair from any part of the country. As an example, take the man of ordinary means living 500 miles distant. He decides to devote one week to it. At a rate of one fare and a third his railroad ticket for the round trip will stand him $13.50. He leaves home Sunday evening and arrives in Chicago Monday morning. If he wants a room without meals there will be plenty of comfortable quarters to be had at $1 a day; with breakfast and dinner or supper $2 will cover that item. Otherwise, say his meals cost him $1.50 a day, he stays six days and has expended:

Railroad ticket	$13 50
Sleeping-car berth, each way, $2	4.00
Room	6.00
Meals in Chicago	9.00
Admission to Exposition grounds	3.00
Side-shows, if he takes them all in	5.25
Pleasure ride on electric boats, elevated, sliding, and ice railroads	.55
One trip to and from grounds on lake steamer	.25
Five trips on street car	.50
Total	$42 05

The only difference to the men living 800 or 1,000 miles away will be the difference in railroad fare. These are not minimum figures. Liberal allowances are made for respectable as well as comfortable accommodations. Of course the well-to-do merchant and prosperous professional man can spend twice the amount in the same length of time going in for luxuries and higher living, but he cannot see any more of the Fair.

As a matter of information and by way of illustration, take a New York man whose bank account is large and put him through a ten days' engagement. It is understood that he will not be satisfied with anything below the best. His railroad tickets and sleeping berths to Chicago and return eat up a $50 bill. Three meals

each way en route on the dining car will get away with $6. His hotel accommodations, provided he lives on the American plan, will cost him not less than $5. His necessary expenditures, therefore, on the supposition that he, too, intends to see everything, will be:

Railroad fare	$40.00
Sleeping-car fare	10.00
Hotel bill, ten days	50.00
Admission to grounds	5.00
Meals on grounds	15.00
Side-shows	5.25
One ride on each of the pleasure schemes	.55
Carriage to and from the grounds, $3 a day	30.00
Total	$155 80

In none of these estimates has any statement been made of the amount of money an extravagant and wealthy person can spend. The object is to show that a man can see the Fair thoroughly on a few dollars or he can spend thousands.

The cost of living in Chicago will be so systematically and well regulated that the visitor need have no concern about not being able to get just what he can afford. There will be plenty of good, comfortable rooms in all parts of the city at the rate of $1 a day without meals. There will be good rooms with meals at $2 a day; better rooms without meals at $1.50 a day, and with meals $3. These rates will prevail in boarding-houses and in second and third-class hotels. In the first-class hotels one can get accommodated at $3 a day or $15 a day. The latter figure will secure a parlor and bedroom, with bath and all the comforts of a luxuriously furnished home. It will not be a hard task to find acceptable accommodations within easy walking distance of the Exposition at rates that no person would feel so niggardly as to take exceptions to, and thus escape the annoyance of traveling back and forth on crowded trains.

People contemplating visiting the Fair are particularly warned against all sorts of schemes for securing rooms in advance, as there will be room for everybody and which can be obtained on arrival without trouble.

DENVER ARCHITECTURAL SKETCH CLUB.

THAT vigorous, talented and healthy sketch club, that of Denver, has had an anniversary, and the secretary sends the following report thereon for the edification of draftsmen:

The fourth annual banquet of the Denver Architectural Sketch Club was held on the evening of Friday, April 14, that day being as near as could be arranged to the anniversary of its foundation on April 17, 1889. Never was such an evening known in the history of the club. Past "annuals" have indeed been pleasant and profitable, with good officers and congenial fellowship; but these very conditions tend to outshine themselves each succeeding year, as shown by this event. The preliminary arrangements, also, were all well considered beforehand, while our blood was yet cool, and our only excitement that of anticipation. Starting out with the unalterable rule, for a working basis, that each member *must* give at least one speech and one song, the president, William Cowe, gave each member some subject a week before, upon which to speak in response to a toast. The members met at the club rooms at 7:30, formed their ranks (which were doubled by the presence of friends), and then made for the banquet room at a neighboring hotel, where things were as they should be. The noble spread was duly honored, and, by 11 o'clock, the tables being cleared, the guests gave those healthy indications of squaring themselves out for a good time which generally succeed a due observance of necessities. Several letters, expressing regret for absence, were read, and among these was one from honorary member R. C. McLean, editor of THE INLAND ARCHITECT; this, being expressed in very humorous terms, was received with great applause, and the writer's regret at his absence was fully shared by those assembled. They voted "Better luck next time."

When these letters were got through (there were very few), the President rose and cost the hotel $4 worth of hard oil finish which he scattered from the table top in large lumps in hammering for order. The proverbial pin being heard to drop was not in it; we heard the flies on New York moving distinctly. Then, always secure of his audience, our chief began some "remarks" touching upon the history of the club, its early trials and struggles for existence, ending up by pointing to its present high status as calling for unwearied effort not only to sustain but to surpass. This is always a theme of deathless interest, and it was handled in a manner calculated to stir the soul. Vice-President T. A. Green followed with some observations on "Architectural Associations," the clearness and point of which were only equaled by his size and modesty. The secretary, Harvey Pridham, who bears a bad reputation for joking, was punished on this occasion by having to respond to "The Draftsman." The subject is a serious one, and the president thought he had him safe this time, but he managed to break out about twenty times in spite of all precautions. D. R. Huntington then gave a recitation in melodramic style of the verses entitled "The Architect's Man," which appeared in *Puck*, and which bid fair to become a standing order on such occasions. Business matters took at first an acute and then a humorous turn in a masterly speech by Treasurer J. R. Rainbow, entitled "The Silver Question as Related to Architecture." He clearly showed that to make either President Cleveland or Secretary Carlisle treasurer of the Denver Architectural Sketch Club would at once convert those gentlemen to free silver views, which at present they oppose. (N. B.—The dues are $1 a month.) "Architectural Illustration and Illustrators" was the subject allotted to W. Pell Pulis, and the result was not only a great summing up of the merits of the day, but edged around into a fine argument on the virtues of sketch clubs in general, but this one in particular. E. R. Rice handled "Architecture of the West" in a short and pithy manner, full of instructive point. He is the man, you know, who has never been known to waste a word. J. Bevan Phillips convulsed everyone by his remarks on "styles," and startled all his hearers by a series of references to men and things which showed opinions none the less strong because seldom met with. J. G. Link on "The Age We Live In," and Harry Thomas with "Does Architecture Pay?" advanced some views which were of an elevating tendency, and bade both old and young turn their thoughts to better things (architectural, of course), and the members felt wiser and better.

Down along the lines went the president in merciless manner until the demand for the evening was satisfied by a speech from every one, visitor or member. Capital songs were then commenced, and this also was a rule, with scarcely an exception. As, however, these were adapted to no particular subject, but to the object of having a good time, it will be sufficient to chronicle the thanks of the club, outside of its own members, to such friends as Lawrence Phillips, G. M. P. Pridham, Frank Collins, T. McLaren, F. E. Kidder, Henry Read and James Blaikie. The president started out to recite, and has promised us the balance, which he could not remember, at the same occasion next year.

HARVEY R. PRIDHAM, Secretary.

ASSOCIATION NOTES.

SKETCH CLUB OF NEW YORK.

The club held its April meeting in the club rooms on Saturday evening, the 1st. Mr. Parfitt, of Brooklyn, and Mr. Warren R. Briggs, treasurer of the Architectural League, were the guests of the evening. Mr. Parfitt delivered an interesting lecture on the architecture of four European cities, Oxford, Rouen, Nuremburg and Venice. The lecture was illustrated by stereopticon. Mr. Briggs addressed the club on the subject of amalgamation with the league, but at the close of the discussion, it was voted to drop the subject for the present. In the March competition, first mention was awarded Edgar A. Josselyn, and second to Geo. L. Melendy. The meeting closed with an hour's entertainment by a prestidigitateur.

ENGINEERS' AND ARCHITECTS' CLUB OF LOUISVILLE.

The engineers and architects of Louisville have got together and organized a club, with rooms in the Norton building, with the following officers and directors: President, Marshall Morris; vice-president, Harry P. McDonald; secretary, F. W. Mowbray; treasurer, the Peoples' Bank of Kentucky. Directors—Charles Hermany, John MacLeod, J. M. Johnson, C. J. Clark, Pierce Butler, E. E. Kuersteiner. The meetings are held in the club rooms on the second Thursday of each month at 2 o'clock. The club rooms are open daily during business hours and engineers and architects visiting Louisville are cordially invited to avail themselves of the privileges of the club rooms.

THE EDINBURGH ARCHITECTURAL ASSOCIATION.

On Saturday afternoon the Edinburgh Architectural Association visited the S. S. C. Library and the M'Ewan Academic Hall. There was a good attendance of members, and the outing was under the presidency of Mr. Robertson, of H. M. Board of Works, president of the society.

Dr. R. Rowand Anderson conducted the association over the M'Ewan Hall. At the outset he explained the main features of the magnificent building. He said he had adopted the form of the Greek theater, believing it to be far the best for an auditorium. There were two galleries, making the building capable of seating 3,000 people. The light is obtained from the dome, a row of round windows above the cornice and a large window at the back of the stage. Ample entrances and exits have been provided, and there is a stair for each gallery, so that the occupants cannot crowd against each other. Round the building runs a handsome passage. There is a great outer wall, and an inner one of arches and pillars, the diameter of the former being 134 feet 6 inches, and the latter 104 feet. The covering of this area, Dr. Anderson said, was the most difficult problem he had to face. It had been solved by Mr. Westland, who had done a very clever piece of work. It was a steel roof, and a very novel and able production. Dr. Anderson then pointed out that it was proposed to build a tower about 280 feet high.

Mr. Westland explained the construction of the roof. The whole structure was carried by 22 ribs corresponding to the divisions of the building. These ribs had to be of peculiarly strong construction from the fact that it was impossible to put in any tie rods. An awkward thing, he explained, in connection with the bracing of the ribs was that at the back of the stage the circle of the building was not completed. This necessitated the whole strain being carried across the stage by means of a very heavy steel girder weighing about 26 tons. Owing to the great expansion—half an inch—which would take place in the steel of the roof, and to guard against any movement of the wall, the girders have been placed on rollers. While this might at first seem an unsafe thing to do, it could be seen that while each rib could expand, the building could never move in the direction of any one of them. As regards the steel, it was of the usual kind, and calculated to bear the roof strain, which would be 5 to 5½ tons to the square inch. The roof

had been erected by building in the center of the building a staging on which they erected an ingenous circular crane. By this means they were enabled to lift the ribs whole. After its erection the roof subsided one-eighth of an inch.

Above the second gallery is a beautifully carved stone cornice. This cornice is 62 feet above the floor of the building, while the rim of the roof is 90 feet in height. In the area of the building accommodation is afforded for graduates, and the seats gradually rise toward the back. The stage, which is topped by a magnificent arch, has been fitted up for an organ and orchestra. The galleries were next visited. From this vantage ground the height and immensity of the building could be more fully appreciated.

CHICAGO ARCHITECTURAL SKETCH CLUB.

The entertainment committee of the Chicago Architectural Sketch Club has issued invitations for the formal opening of the club's new quarters in the Masonic Temple building the evening of May 8. It is designed that the club members at that time entertain their friends, and to this end a slight programme has been prepared, a collation will be served, and in other ways the general attractiveness of club membership will be exhibited to those draftsmen who have not, but should become members of this acknowledged leading sketch club in the United States. The formalities will not extend beyond the reception of guests, both ladies and gentlemen—so that strangers will enjoy the evening as generally as the oldest member.

KANSAS CITY CHAPTER A. I. A.

"Isolated Pier Foundations" was the subject of discussion at the April meeting of the Kansas City Chapter, American Institute of Architects, held on April 3. It had been expected that municipal parks and boulevards would be touched upon, but this subject was left for consideration later in the season. The discussion was opened by W. C. Root, who held that isolated piers were better than continuous wall foundations, as they gave opportunity to put the most strength just where it was needed. According to the old system the foundation was made equally strong at all points, although the strain was manifestly different. The weight of a superstructure could be so exactly calculated and disposed that the point where the greater strain existed in the foundation could be made proportionately stronger and other points weaker. Another point in favor of the pier system was that it brought about a great saving of material. Mr. Root's views were generally indorsed in the animated and interesting discussion which followed. This meeting of the Chapter was purely of an educational and social character. The regular business meeting for hearing reports from the various officers will be held later in the month.

At the annual meeting of Kansas City Chapter, American Institute of Architects, held April 10, the following officers were elected for the year: President, Henry Van Brunt; vice-president, W. F. Hackney; secretary, W. C. Root; treasurer, F. E. Hill; trustees, A. Van Brunt and J. O. Hogg. L. G. Middaugh and L. E. Sheperd were elected to membership.

AMERICAN INSTITUTE OF ARCHITECTS.

A meeting of the executive committee was held in the rooms of the New York Chapter, Welles building, 18 Broadway, on the afternoon of the 10th of April. Present: President Edward H. Kendall; Treasurer Samuel A. Treat, Messrs. George B. Ferry and W. W. Clay, and Secretary Alfred Stone.

As a result of the letter ballot, the following persons were found to be elected Fellows of the American Institute of Architects: John C. Worthington, Philadelphia, Pennsylvania; D. Fred Charlton, Marquette, Michigan; Samuel S. Godley, Cincinnati, Ohio; H. H. Bickford, Elmira, New York; J. Walter Stevens, St. Paul, Minnesota; Wilson Eyre, Jr., Philadelphia, Pennsylvania; J. C. Hornblower, Washington, D. C.

The president and secretary were directed to send a communication to the secretary of the treasury in regard to the operations of the bill in relation to procuring designs for public buildings, and from the reports of those who have interviewed the secretary, it is believed that the provisions of the bill will be carried out in such a manner as to insure a fair trial of its value.

Plans were discussed for the next annual convention, which will be held in Chicago, in conjunction with the International Congress of Architects, in the week beginning July 31, 1893, and the secretary was directed to issue a circular of information as soon as he could learn more in regard to the International Congress of Architects.

ARCHITECTURAL SCHOOL OF THE CHICAGO ART INSTITUTE.

The School of Architecture of the Art Institute is building itself up steadily, though not as rapidly as might have been expected. Perhaps a slow growth is more likely to be substantial. That the school has not gained faster in numbers is due to two causes, both of them creditable rather than discreditable to the school. The architectural division is in a manner submerged and hidden by the great school of academic art with which it is associated. This makes it difficult to publish the architectural school and give it prominence, at the same time it derives great advantages from this association. It is safe to say that there would be scores of students if it were known to parents and students that there was such a school at hand. In the second place the success of the school in one direction checks it in another. The impatience of American youth to get to work earning money is proverbial. Even the short two years' course proves too much for many members of the school, and after one year, when they have got the use of the drawing pen and a little rudimentary knowledge they get places in architects' offices and disappear from the school. All the students of last year except three or four have dropped out in this way. No doubt they are much more useful to their employers than wholly untrained boys, but they are from being proper graduates of an architectural school. The number of students now is fifteen or twenty, and they enjoy great advantages for the study not only of design, but of mathematics and construction, under the tuition of Millet, Pond, Shattuck, Otis and other teachers and lecturers. Mr. Otis' course upon ordinary construction is in progress, and Mr. Pond's course upon the theory of design is about to begin, while the practice of drafting, the study of mathematics and the solution of architectural problems goes on all the time.

OUR ILLUSTRATIONS.

Chateau de Josselin, France, J. W. Krause, Del.

Screen, St. Peters, Lourain, Oscar Tolhurst, Del.

Houses by E. G. W. Dietrich, architect, New York.

The Gesu, Milwaukee, Wisconsin, H. C. Koch & Co., architects.

House for A. Burtis, Buffalo, New York, E. A. Kent, architect.

Kirschbaum Building, Philadelphia, Frank R. Watson, architect.

The Spectatorium for Steele Mackey, Chicago, Jenney & Mundie, architects.

High School at Muskegon, Michigan, Patton & Fisher, architects, Chicago.

Residence for B. T. Skinner, Battle Creek, Michigan, Charles F. Whittlesey, architect, Chicago.

Cathedral of the Sacred Heart and Episcopal Residence, Duluth, Minnesota, C. A. Tenbusch, architect.

Details of the Home of Washington, Mount Vernon, Virginia. Reproduced for the Virginia State Building at the World's Columbian Exposition, Chicago. From measured drawings by Edgerton S. Rogers, architect, Richmond, Virginia. There are shown details of the Main Hall, the Banquet Hall, New York Room, the Illinois Room and the Library.

Design of a window made by George E. Androvette & Co., Chicago, for their exhibit at the World's Fair; the subject, "A Roman Chariot Race," is painted on antique glass, and the border, or frame, is a very elaborate mosaic, interpreting the working of opalescent glass in romanesque ornament. The possibilities of glass working in a decorative way, both by painting and mosaic treatment, are well developed in this window. The exhibit will be in the northeast corner of gallery of "Manufactures and Liberal Arts Building."

PHOTOGRAVURE PLATES.

(*Issued only to subscribers to the Photogravure edition.*)

Row of houses at Chicago, Burnham & Root, architects.

M. E. Church, Evanston, Illinois, Burnham & Root, architects.

Residence of George A. Fuller, Chicago, Charles S. Frost, architect.

Residence of James W. Ellsworth, Chicago, Daniel H. Burnham, architect.

Residence of S. Leonard Boyce, Chicago, Francis M. Whitehouse, architect.

Reid Hall, The Academy, Lake Forest University, Pond & Pond, architects, Chicago.

Residence of Henry E. C. Daniels, Evanston, Illinois, Pond & Pond, architects, Chicago.

Grand Central Passenger Station of the Wisconsin Central Lines, Chicago, S. S. Beman, architect.

MOSAICS.

Wehle & Camp, architects, have established themselves at 250 Fifth street, Louisville, Kentucky. Mr. T. O. Wehle was for many years a leading practitioner in that city, but through failing health was obliged to resign his practice and travel. He has spent several years in the West and the past two years in Chicago, where in the employ of one of the larger firms he has gained additional experience. Mr. E. M. Camp has passed through ten years of experience in Chicago and is one of the best equipped among Chicago practitioners, and the firm will thus give to Louisville a valuable addition in all lines of architectural practice, their abilities recommending them especially to all kinds of large and important structure work.

European Architecture.—Messrs. Olin C. Smith and Allyn A. Packard, of Chicago, have undertaken the publication of a monthly collection of photographs of European architecture, which work has already reached its seventh number. There are ten plates, 9½ by 12, in each number, beautifully printed on bond paper, which is firm and very thin, so that a large number of plates will require but little shelf room. The selection of subjects is made with unusual skill, and shows a practical familiarity with the working requirements of modern architects. The plates before us are largely of Italian decorative detail of the best quality, and would be no less useful to sculptors and decorators than to architects. The footnotes are brief, interesting and useful, particularly in giving the date of execution of the work, when known, and its designer's name. The subscription price is $10 per annum, in advance.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than $5,000 are not published.

Chicago, Ill.—Architect Julius H. Huber: For William Drieske, on Clybourn avenue and the river, a series of coal sheds with machinery; cost about $25,000. For J. L. Cochran, at Edgewater, eleven two-story basement and attic residences; to be of frame construction, with stone basements, hardwood finish, the modern sanitary improvements, laundry tubs, heating, etc. For Charles Steinbrecher, a two-story store and flat building; to be of pressed brick and stone front. For Herman Silverman, on Thirtieth and Dearborn streets, remodeling house into store and flat building; will raise building and put one story underneath; sanitary plumbing, mantels, etc. For A. L. Lawshe, at Converse, Indiana, a two-story basement and attic residence; to be of frame with stone foundation, have sanitary improvements, cypress finish, etc.

Architect J. N. Tilton: Preparing plans for Episcopal church; size 100 by 50 feet; to be erected at Woodlawn avenue and Sixty-fifth street. Also two-story and basement parish house; size 90 by 26 feet; to be of pressed brick and stone trimmings, have interior finish in cypress, stained glass windows, heating apparatus, etc.

Architect J. C. Brompton: For J. L. Cochran, at Edgewater, three two-story basement and attic residences; to be of frame, with stone basements, have hardwood finish, the best of modern improvements, furnaces, etc. Also for M. Willis, on Sheffield avenue, near Addison street, a three-story apartment house; to be of pressed brick and stone front, have hardwood finish, mantels, the best of sanitary plumbing, laundry tubs, heating, etc.; cost $20,000. Also making drawings for a suburban railway station, to be erected on the West Side.

Architects Hallstrom & Peterson: For Oscar B. Conklin, on Paulina street, near Belleplaine avenue, a two-story frame residence; to have a stone basement, sanitary plumbing, mantels, furnace, etc. For Lizzie H. Walker, at the same location as above, a two-story frame residence; size 22 by 63 feet; to have stone basement, etc.

Architect Henry Sierks: For John Orb, at the corner of Rice and Robey streets, a three-story flat building; size 50 by 75 feet; to be of pressed brick and stone on two fronts, have the sanitary plumbing, hardwood finish, mantels, etc.

Architect Charles S. Frost: For D. A. Kohn, on Michigan avenue, south of Thirty-third street, two three-story and basement residences; size 50 by 80 feet; to be of pressed brick and stone fronts, have hardwood interior finish and mantels, electric light, heating, etc.; cost $30,000.

Architect John T. W. Jennings made plans for a three-story and attic summer hotel; size 84 by 36 feet; to be erected at Clear Lake, Iowa.

Architects Flanders & Zimmerman made plans for finishing rooms Masonic building, to be occupied by the Masonic fraternity. In all there will be eleven rooms, the principal one being the consistory, which will be provided with balconies and be 160 feet long by 40 wide; a drill hall with stage, size 46 by 97; blue lodge room, 41 by 56; lodge room, 44 by 30; two parlors, 26 by 29; commandery, with balconies, 40 by 55, and red cross room, 42 by 36, dressing-rooms, etc. Also made plans for a two-story basement and attic residence; to be of frame with stone basement, have hardwood finish, mantels, etc.; cost $10,000; to be erected on Vincennes avenue and Forty-seventh street for A. I. Hartshorn.

Architects Dixon & Brookes: Preparing drawings for three-story and attic Masonic temple, to be erected on Forest avenue south of Thirty-first street, for Home lodge; it will be of Bedford stone, terra cotta and mottled pressed brick; have steam heating, electric light, marble, tile and mosaic work, etc.

Architects Ostling Brothers: For Lawrence Brothers, near Humboldt park, a three-story flat building, 21 by 56 feet in size; to be of pressed brick and stone front, have all the sanitary improvements, and cost about $10,000. For T. P. Carpenter, on North Ashland avenue, a two-story and basement flat building, 27 by 65 feet in size; to have a buff Bedford stone front; cost $10,000.

Architect Thomas Wing: For G. Phegley, at 1398 Jackson street, a two-story flat building, 24 by 56 feet in size; to have a front of Bedford stone; cost $8,000.

Architects Newman & Demoney: For G. Carley, Fifty-fifth street and Indiana avenue, a two-story residence, to have a front of pressed brick and stone, all improvements, and cost $8,000. Also for Encampment Company, a one-story hotel, 79 by 153 feet in size; to be constructed of frame; also office, 50 by 30 feet in size.

Architect H. B. Wheelock: For Hotel Endeavor Company, at Seventy-fifth street and Lake avenue, a three-story addition, to consist of five or six buildings, 40 by 70 feet each; to be of frame. For E. E. Barnard, at Evanston, a two-story frame residence, in the Colonial style of architecture; to have hardwood finish and all improvements, and cost $10,000.

Architect Thomas Appleton: For B. A. Kipp & Co., at Milwaukee, a three-story factory, 100 by 150 feet in size, and a five-story and basement, 100 by 150 feet; also power house, 50 by 50, etc.; to be of common brick, mill construction; cost $60,000. Also made drawings for the electric light and pumping station for the South Side Road on Sixty-first street, to consist of engine-room, 52 by 52 feet in size; boiler house, 39 by 35; dynamo and pumproom, 52 by 52, etc. Also made drawings for glass manufactnring plant, to be erected at Alexandria, Indiana, for the United Glass Company, to consist of a one-story building 350 by 130 feet in size, very high story; a building, 185 by 70, with L 70 by 85; a batch house, 140 by 60; storehouse, 350 by 40; machineshop and boiler shop, 100 by 80; clay house, 140 by 60, etc.; to be constructed of corrngated iron and frame, with truss roof.

Architect W. R. Clayton: For Phillip May, on Nineteenth and Dearborn streets, a three-story store and flat building, 21 by 67 feet in size; to be of stone front, have all the sanitary improvements, and cost $10,000. For John Haskins, at Sixty-third and Wright streets, a three-story flat building, 28 by 66 feet in size; to cost $10,000. Stone front, sanitary improvements, electric light, mantels, laundry tubs, etc.

Architect C. M. Almquist: For T. C. Octagon, on Twenty-eighth street near Cottage Grove avenue, a three-story and basement flat building; to be of pressed brick and stone front, have all the sanitary improvements; cost $8,000. For C. H. Anderson, on Maplewood avenue between North avenue and Division street, a three-story flat building of pressed brick with stone trimmings, to have bathrooms, closets, mantels, and cost $6,300. For same owner at same location, a three-story flat building, two flats in length, size 22 by 80 feet, to have a front of pressed brick with stone trimmings; cost $10,000. For Thomas Hansen, at Lawndale road and Kedzie avenue, three two-story frame houses, 22 by 50 feet in size; to have brick basements, bathrooms, closets, mantels, gas fixtures; cost about $10,000. For the same owner, at same location, two three-story store and flat buildings, 25 by 82 feet each; to be of frame with brick foundation, have bathrooms, closets, mantels, gas fixtures, and cost $10,000.

Architect J. W. Ackerman: For J. J. Healey, at Hartland, Illinois, a dairy farm, 130 by 66 feet in size; to be of frame construction with stone piers. Also barn for seventy cows and stalls for twelve horses.

Architect Ira C. Saxe: For Poorbangh & Fuller, three two-story frame flats, to be erected at Oakwoods. For M. Walker, on Commercial avenue south of Cosgrove street, Ravenswood, two two-story flat buildings, to be of frame with brick basements, have all improvements, and cost $7,000. For W. Lloyd, on Commercial avenue south of Cosgrove street, four two-story houses, 26 by 46 feet in size; to be of frame with brick basements, have all the sanitary improvements, gas fixtures, mantels, furnaces, laundry tubs, etc. They will be in the Colonial style of architecture, and have eight rooms, bathroom, and reception hall.

Architect Arthur G. Morey: For M. Owen, on Sheridan drive, a handsome two-story basement and attic residence, 25 by 60 feet in size; to be of stone front and pressed brick sides, have hardwood finish, hot-water heating, electric light and the best of sanitary improvements. For N. M. Goodale, at No. 509 Racine avenue, a three-story flat building, size 50 by 65 feet; to have a front of pressed brick with stone trimmings, sanitary plumbing, mantels, etc. Also made drawings for Baptist church, to be erected at Washington, D. C.; it will be 100 by 100 feet in size, have stone on two sides, handsome stained glass windows, electric light, ventilation plant, heating apparatus, etc.

Architect E. F. Bargman: For M. Knrz, corner of Blackhawk and Town streets, a three-story and basement flat building, 30 by 50 feet in size; to be of pressed brick and stone front and side, have the sanitary plumbing and cost about $10,000.

Architect Oliver W. Marble: For S. W. Homer, at River Forest, a two-story basement and attic residence, 35 by 65 feet in size; to be of frame with stone basement, have hardwood interior finish and mantels, hot-water heating, the best of sanitary improvements, electric light, laundry tubs, etc.

Architects Crowen & Richards: For Wiggins, Starbuck & Co., at Williamsburg, a three-story building, 44 by 80 feet in size; to be of stone first story and pressed brick above; it will contain town hall, bank, safety deposit vaults and Odd Fellows' lodge rooms. Also made plans for remodeling residence on Lake avenue, near Fortieth street, for James Starbuck; hot-water heating, electric light, new interior finish in cherry quarter-sawed antique oak, etc.

Architect J. E. Scheller: For Mrs. M. E. Mifford, at Evergreen Park, a two-story frame residence; to have stone basement and all sanitary improvements. For L. D. Quail, at Twin Lakes, Wisconsin, a two-story, neatly designed frame summer residence For D. J. Davis, at Lake avenue and Fifty-fifth street, a two-story concert hall, 80 by 50 feet in size; to be of brick, and cost $8,000.

Architect R. W. Dahlgren: For John E. Nelson, on Paulina street, north of Leland avenue, Ravenswood, a two-story flat building, 24 by 56 feet in size; to have all the modern plumbing, mantels, furnaces, etc. Also a two-story flat building, 44 by 62 feet in size, to be erected on Paulina street, south of Lawrence avenue, Ravenswood; to be of buff pressed brick with buff Bedford stone trimmings, have hardwood finish and mantels, electric light, bells, speaking tubes, laundry tubs, furnaces, etc.

Architects Patton & Fisher are preparing drawings for the Academy of Sciences, to be erected in Lincoln park; it will be a handsome structure, 60 by 122 feet in size, three-story and basement; the basement and first story to be of stone and above this will be of light-colored pressed brick with terra cotta trimmings; the interior will be elaborately finished in marble, mosaic and tile work, have electric light, steam heating and all the conveniences; it will be absolntely fireproof, and cost upwards of $100,000.

Architect F. B. Townsend: For Chapman Brothers, a four-story annex to the Hotel Vendome on Oglesby and Sheridan avennes; it will be 160 by 90 feet in size; of pressed brick and stone front, have steam heating, electric light, the best of sanitary improvements, hardwood interior finish and mantels, laundry tubs, etc., and cost about $50,000. Also made plans for twenty two-story frame flat buildings, 22 by 42 feet each, to be erected at West Pullman, for James Smith; they will have brick basements, bathrooms, closets, mantels, furnaces, etc.

Architect W. J. Van Keuren: For J. D. Caldwell, at Ridgeland, a two-story basement and attic frame residence, 25 by 46 feet in size; to have stone basement, all the sanitary improvements, electric light, furnace, laundry tubs, etc.

Architects Stiles & Stone: For M. E. Herbert, a one-story factory, 50 by 125 feet in size; to be of common brick, with slate roof; it will be erected on Shields avenue near Pittsburgh & Fort Wayne tracks. Also, for A. T. Hinckley, on Lake avenne near Fifty-fourth street, a four-story store and apartment house; size 84 by 77 feet; to be of cutstone front, have hardwood finish, electric light, steam heating, the best of sanitary improvements, and cost $35,000.

Architects Brainerd & Packard: For Chicago & Eastern Illinois Railway Company, at Chicago Heights, a station 160 feet long by 35 wide; to be constructed of buff pressed brick and stone. For Putnam county, a two-story addition to courthouse, at Hennepin, Illinois; to be of common brick, tuck pointed; all fireproof construction.

Architect R. T. Newberry: For M. Weber, on Dearborn and Twenty-fourth streets, a four-story and basement apartment house, 25 by 80 feet in size; to be of pressed brick and stone front, have all the sanitary improvements, mantels, etc. For George C. Stirling, at Battle Creek, Michigan, a two-story residence, 25 by 50 feet in size; to be of frame with stone basement, have all the improvements, electric light, etc.

Architects Lamson & Newman: For G. G. Gavitt, on the southeast corner of Whipple and Jackson streets, two two-story flat buildings, 50 by 70 feet each, to be of stone fronts, have all the sanitary conveniences, hardwood finish and mantels, electric light; cost about $20,000.

Architect George W. Maher: For W. W. Jackson, at Seventy-first street and South Chicago avenue, a three-story frame hotel, 116 by 60 feet in size; to have modern conveniences, and cost $15,000.

Architects Treat & Foltz: Made plans for remodeling the Columbus Club, on Monroe street opposite Palmer House; they will raise up building fifteen feet and put under one story; there will be a bank on the main floor, and safety deposit vaults in the basement; to be finished in marble, mosaic and tile work, have steel beams and columns and be strictly fireproof.

Architect W. K. Johnston: For George Coffin, at Oak Park, a two-story frame residence, 34 by 44 feet in size; to be of stone basement, have hardwood finish and mantels, electric light, all the modern sanitary conveniences, laundry tubs, electric bells, speaking tubes, cement basement floors, etc. For J. T. Hayden, at Oak Park, a two-story frame residence, 34 by 48 feet in size; to have a stone basement, hardwood interior and mantels, brick veneer for the first story, all the sanitary plumbing, electric light, heating apparatus; cost $7,000. For Mrs. Smyth, at Austin, a two-story frame residence, 28 by 40 feet in size; to be of brick basement and frame; have all the improvements and electric light. For G. W. Stradtman, at Morgan Park, a two-story frame residence; to have stone basement, electric light, all sanitary improvements, mantels, etc.

Architect W. R. Clayton: For Mrs. Caverley, at Hill street near Wells, a four-story flat building; size 25 by 90 feet; to have a front of stone, the interior hardwood finish, all the sanitary plumbing, mantels, furnace, etc. For James Findley, at Wabash avenue near Fiftieth street, a two-story flat building, 22 by 64 feet in size; to have a front of pressed brick with stone trimmings, all the sanitary conveniences, mantels, furnace, etc.

Architect Louis Martens: For Mrs. E. Smith, at Kaukakee, Illinois, a two-story frame residence; size 30 by 60 feet; to have stone basement, hardwood finish, mantels, sanitary plumbing, furnace, etc. For H. A. Foster, a two-story flat building, 130 by 60 feet in size; to have a pressed brick and stone front, and all improvements. For Olson and Baker, on Emerald avenue near Root street, a three-story apartment house, 50 by 87 feet in size; to have a front of pressed brick and stone, the best of modern improvements, and cost $20,000. For Jacob Vogler, at Madison avenue near Sixty-fifth street, a two-story flat building; to be of frame and have all the improvements.

Architect Lars Backvall: For Mr. Charles Anderslon, on Kenwood place, three-story and basement brick building, with Bedford stone front, in French Gothic style; size 25 by 80 feet; to have hardwood finish, marble wainscoting in vestibnle and bathrooms; laundries and separate water closet for kitchen departments in every flat; hot water, steam heating, gas and electric lighting and the best sanitary improvements; will cost $15,000. For Mr. C. Bargren, on Western avenue, two-story and basement flat building, of brick and Bedford stone front; size 22 by 50 feet; modern improvements; cost $5,000. For Mr. Andrew Hanc, on Austin avenue, in Austin, frame residence, two stories and basement, with hardwood and pine finish, mantels and modern improvements. For the Alpine Heights Furniture Company, Alpine Heights, factory building of frame and veneered brickwork, four stories and basement; size 241 by 81 feet; engine house of brick, 74 by 45 feet in size; dry kiln, frame, 64 by 54 feet in size, with a capacity of 120,000 cubic feet; water cistern of stone and cemented 10 feet deep, 60 by 30 feet in size; large chimney 85 feet high, with machinery, track and improvements.

Cincinnati, Ohio.—Reported by Lawrence Mendenhall: I have been trying to find out, now that the blue birds and robins are with us again, what the real prospects for trade are. My efforts have not been entirely successful, for the reason that a decided diversity of opinion exists. The architects have their boards reasonably well filled and seem hopeful, although much of the large work is for outside towns, which are bestirring themselves. Ohio, Indiana and Kentucky are the busy states. On the other hand, many of the contractors are inclined to take a pessimistic view, saying that they cannot tell what

the summer will bring forth. Several new architectural firms have sprung into existence during the last month. Dittoe & Wisenall is the name of a firm of young architects. Both gentlemen were among the most prominent draftsmen of this city, and if talent and good business tact count for anything there is no doubt but that they will soon rank among the successful architects. They have located in the Neave building. Blitz & Allen is the style of the new firm of architects who have quarters in the Penn building, Cincinnati, Ohio. Mr. Blitz is a French architect, formerly of Chicago. Mr. Allen has been for several years superintending buildings in Philadelphia in connection with large contractors. Both are young men and full of vim and push and with the latest ideas in their line, and we wish for them good business. Another new firm is that of Sweeney & Robinson, both live, energetic young men. Mr. Sweeney is from Philadelphia, and is an architect of experience. Mr. Robinson is also an architect who has several fine buildings to his credit. Another architect who will no doubt capture many plums is Mr. Paul C. Pope, Pike building, Cincinnati.

Architects Crapsey & Brown report as follows: For Portsmouth, Ohio, an opera house and hotel; materials, pressed brick, tin roof, plate and stained glass, architectural iron, steam heat, elevator, scenery, grates, mantels, blinds, chairs, etc.; cost $30,000. Baptist Congregation, Dayton, Kentucky, a church edifice; materials, stock brick, slate roof, hardwood pews, gas, etc.; cost $10,000. Presbyterian Congregation, at Henderson, Kentucky, a church edifice; materials: stone, slate roof, furnace, hardwood pews, stained glass, frescoing, etc.; cost $50,000. Remodeling the First Presbyterian Church, of Walnut Hills, Cincinnati, Ohio, at a cost of about $4,000, adding rooms, etc.

Architects S. Hannaford & Sons report as follows: For the George H. Dean and Kite Brothers' Company, Cincinnati, a store building; materials: pressed brick, tin roof, elevator, steam heat, etc.; cost not given. For the German Methodist Episcopal Congregation (care architects), a church edifice; materials: pressed brick, slate roof, hardwood pews, stained glass, furnace, etc.; cost not given.

Architect James W. McLaughlin has prepared plans for Mr. R. M. Shoemaker, Cincinnati, for a residence; materials: pressed brick, stone, slate roof, hardwood, furnace, grates, mantels, stained glass, decorating, etc.; cost $20,000.

Architect Gustave W. Drach is busy on plans for Mr. E. Hart (care architect), for a residence; materials: pressed brick, slate roof, hardwood, furnace, grates, mantels, stained glass, etc.; cost $15,000. He has also drawn plans for Mr. William A. Goodman, president Lafayette Bank; also for Dr. Robert Sattler.

Architects Des Jardin & Haywood have drawn plans for a residence for Mrs. A. Segal (I. Faller & Sons), Cincinnati; materials: pressed brick, slate roof, furnace, hardwood, grates, mantels, stained glass, etc.; cost $10,000. Also plans for a residence for George W. Laws, Esq., Clefton, Cincinnati, Ohio; materials: frame and shingle, shingle roof, hardwood, furnace, mantels, grates, gas, plumbing, etc.; cost $10,000.

Architect W. W. Franklin has drawn plans for a store and flat building for Mr. Charles Domhoff (M. Addy & Co.), Cincinnati, materials: pressed brick, stone trim; heating not settled; iron work, grates, mantels, tin roof, gas, plumbing, etc.; cost $20,000.

Architect J. G. Steinkamp has drawn plans for J. H. Lippelman for a store and flat building, materials: pressed brick, stone trim, tin roof, pine finish, gas, plumbing, etc.; cost $8,000.

Architect L. Piket reports: For Hanke Brothers, a large warehouse, 50 by 250 feet; three stories; materials: pressed brick, stone, tin roof, iron, steam heat, elevator, etc.; cost $30,000.

Architect Emil G. Reuckert has prepared plans for Charles B. Fishburn, Cincinnati; materials: pressed brick, slate roof, hardwood, hot-air heat, grates, mantels, stained glass, gas, plumbing, etc.; cost $10,000. Messrs. Sweeney & Robinson have prepared plans for a fine schoolhouse at Bond Hill, Ohio; materials: stock brick, tin roof, furnace or stoves, blackboards, etc.; cost $15,000. They also have prepared plans for a $5,000 frame dwelling for Mr. Lockhorn to be built at Hyde Park. Also plans for frame dwellings for Adolph Falk, at Delhi; Mr. Gutzwiller, Taylor street, Fairmount, and A. W. Corn, Bullitsville, Kentucky.

Architect Paul C. Pope has prepared plans for the Sander Packing Company for the addition of two stories to the two-story portion of their Oehler street establishment, this making it of uniform height with the rest of their buildings. The same architect has also the plans for a frame cottage for C. D. Battelle, of the Ohio Roofing Company, to be built at Pleasant Ridge.

Architects Blitz & Allen report: they have on the boards, in connection with other work, plans for Methodist church, to be erected in North Carolina; building to be 140 by 150 feet, one-story and basement, auditorium, 60 by 110 feet, seating 800; Sunday school room seating 400; parlors, class rooms and pastor's study. The building is to be of Roman Akron pressed brick with red granite trimmings and terra cotta, the tower over main entrance to be 178 feet high; style of building is Roman and Norman. They desire estimates on bevel and stained glass, slate roofing, pews, clock and bell. The method of heating and ventilation is to be of the Peck-Smead system. The building is expected to cost $40,000.

Cleveland, Ohio.—Architect J. W. Russell reports a brick and wood foundry building for the Gartland Foundry Company; to cost $10,000.

Architect Godfrey Fugman: For Cleveland Crematory Company, a stone crematory building, 55 by 68 feet in size, to be built on Euclid avenue near Lake View Cemetery; cost $18,000. For I. Brudno, a three-story stone and pressed brick business block, 25 by 100 feet; cost $10,000. For the Saengerfest Company, an iron, steel and frame Saengerfest building, 200 by 200 feet in size, clear span without posts; cost $35,000; building at the corner of Willson and Scovill avenues.

Architects Coburn & Barnum report a frame house and stable for Joshua Gregg, for which ground has been broken; to cost $20,000; house is to be 45 by 70 feet in size; frame finished attic, slate roof, hardwood interior finish, mantels and all modern improvements. For George W. Howe, a brick and terra cotta residence, 52 by 104 feet in size; cost $25,000, all modern improvements, hardwood interior.

Architects Lehman & Schmitt: For King & Uhl, a three-story brick and stone office and store building, 66 by 130 feet in size; cost $25,000; steam heat; to be built on Euclid avenue. For F. Hirscheimer, a $15,000 brick residence, all modern improvements, hot-water heat; a country residence for Julius Feiss, on Lake avenue; frame, 60 by 125 feet in size; cost $40,000; all modern improvements, including steam heat and electricity. For same party, a gardener's cottage and stable, costing $5,500; both frame buildings, respectively 26 by 40 and 30 by 45 feet in size.

Architects Sprackling & Lougee report that the building committee of the Cleveland Grays Armory have purchased their plans and elevations for the proposed armory, and will use them in part in the building. For Lewis Miller, a frame residence, 26 by 48 feet in size, hardwood interior, hot-water heat, mantels; cost $4,500.

Denver, Colo.—Architect F. C. Kidder: For George Bailey, three two-story brick houses; size 27 by 43 feet; cost $21,000.

Architects Varian & Sterner: For George Campbell, a two-story brick dwelling; size 25 by 44 feet; cost $5,900.

Architect William Quayle: For W. P. Murphy, a two-story brick store building; size 75 by 75 feet; cost $11,000.

Architects F. E. Edbrooke & Co.: For Kent Stretchfield, a three-story business block; brick and stone; size 50 by 120 feet; cost $15,800.

Architect R. S. Roeschlaub: For No. 1 School District, a one-story school building; brick and stone; size 59 by 135 feet; cost $5,350.

Architect F. C. Eberley: For Vorwarts Turn-Verein, a one-story brick assembly hall; size 66 by 88 feet; to cost $6,000.

Architect W. P. Fesh: For Emma Cox, a two-story brick residence; size 25 by 36 feet; to cost $5,000.

Architects J. S. Brican & Co.: For Charles R. Pratt, a two-story brick residence; size 23 by 53 feet; cost $5,960. For W. G. Riddock, a two-story brick residence; size 32 by 37 feet; cost $8,950; contractors Mouat Lumber Company. For M. Wunder, a two-story brick dwelling; size 31 by 38 feet; to cost $6,900.

Architects' names not reported for the following: For L. C. Haynes, two three-story dwellings; brick and stone; size 22 by 73 feet; cost $13,000. For P. J. Brennan, a two-story brick house; size 23 by 44 feet; to cost $5,900. For George Filbeck, a two-story brick house; size 31 by 48 feet; cost $5,960. For Martin Melhorn, two two-story dwellings; brick and stone; size 32 by 49 feet; cost $20,000. For J. B. Peterson, a two-story brick dwelling; size 40 by 43 feet; cost $12,000.

Detroit, Mich.—Architects M. L. Smith & Son: For the Home Savings' Bank, a eight-story brick and stone building, on corner of Michigan avenue and Griswold street; size 46 by 80 feet; to cost $250,000. For the First Commercial and Savings' Bank Association, Wyandotte, Michigan, a three-story brick and stone office building; to cost $20,000.

Architects A. C. Varney & Co.: For the Detroit Machine Screw Works, a three-story brick manufactory building; size 200 by 100 feet; cost $25,000. For John Hawley, a four-story apartment building, corner of John R. and Columbia streets; size 100 by 45 feet; cost $30,000.

Architect H. J. Rill: For the Morton Baking Company, a three-story brick bakery; size 60 by 69 feet; cost $13,000.

Architects Spier & Rohns: For the Detroit Chamber of Commerce, to be built on corner of Griswold and State streets, twelve stories high, fireproof construction; size 85 by 100 feet; cost $400,000.

Architect R. E. Raseman: For T. H. A. Backus, a two and one-half story brick residence; to cost $10,000. For J. C. McGregor, remodeling brick residence; cost $10,000. For J. Penein, a two-story brick store and flat building on Michigan and Sixth streets; to cost $10,000.

Architect J. E. Mills: For Joseph T. Hasty, a two-story brick residence; cost $8,000. For William H. McFall, a two-story double frame residence; cost $7,000.

Architects Mason & Rice: For Charles E. Bloomfield, Jackson, Michigan, have prepared plans for a public library; to cost $30,000.

Architect Ed. C. Van Leyen: For Mrs. Mary Fifield, a two-story frame store and flat building, on Grand R. avenue; to cost $5,000. For A. N. and V. F. Moross, four three-story brick houses on Milwaukee avenue, between Woodward avenue and Cass street; cost $18,000. For A. J. Van Leyen, a two-story brick store and flat building; to cost $5,000.

Architects Jacques Rantoul & Co., of Boston: For the Union Trust Company, a ten-story office building, to be built on corner Griswold and Congress streets; to cost $400,000.

Kansas City, Mo.—Architect L. G. Middaugh: For the city of Independence, a modern school building, brick, two stories high, and containing eight rooms; to cost $13,000. For J. J. McPerson, a two-story residence, at Elma and Prospect avennes, of pressed brick and brownstone, copper cornice; to cost $12,000. For Dr. John Bryant, a three-story brick business house, 39 by 115 feet in size, on Main street, Independence; to cost $15,000.

Architects Gunn & Curtis: For the Soldiers' Home at Leavenworth, a brick hospital building, 180 by 32 feet in size, two stories high; to cost $12,000. For the Progress Club, a three-story club house, of brick and terra cotta; to cost $30,000. A committee of the club is now engaged in selecting a site, the choice being between two properties. Building will at once begin when choice is made.

Architect James Bannon is closing up his business and proposes to spend a year in Europe.

Architect G. M. D. Knox: For Mrs. Mary Adkins, a modern three-story business house, 50 by 111 feet in size, on the east side of Walnut between Eleventh and Twelfth streets; to cost $25,000. For Thomas Gillespie, a two and one-half story brick residence, on the east side of Troost avenue near Twenty-eighth street; to cost $10,000. For John J. Green, block of flats on Brooklyn avenue just north of Independence avenue; three stories, of brick and cut stone; to cost $30,000.

Architect Walter C. Root: For the Realty Investment Company, a dwelling on Wabash avenue near Independence; two stories, basement and attic, of brick; to cost $7,000. For Frank Simpson, a dwelling on Olive street near Independence avenue, of brick; two stories, attic and basement; to cost $5,000.

The firms of Gunn & Curtis and Van Brunt & Howe have been invited by the authorities of the Kansas State University to furnish plans in competition with other architects for a new library building for the university.

Architects Knox & Guinotte: For Thomas Green, three-story flat houses at Eleventh and Wyandotte streets, 44 by 75 feet, of pressed brick, with stone trimmings; to cost $15,000. For the John Deere Plow Company, a five-story brick warehouse, 60 by 110 feet, at Thirteenth and Hickory streets; to cost $40,000. For Langston Bacon and D. O. Smart, brick business block, 39 by 115 feet, three stories, on Main street, between Tenth and Eleventh; to cost $15,000. For D. O. Smart, on the site of the burned Jaccard building on Walnut street, five-story business block, with pressed brick front; to cost $45,000. For A. J. Gillespie, pressed brick residence at Twenty-eighth street and Troost avenue; to cost $15,000.

Architects Hackney & Smith: For Huke & Sexton, four brick residences at Twenty-fifth street and Troost avenue; to cost $8,000 each. For P. H. Hovey, brick residence on Lydia avenue between Thirty-second and Thirty-third streets; to cost $6,000. For L. T. Brown, brick residence at Linwood and Lydia avenues; to cost $6,000. For Mrs. F. R. Massey, at Springfield, Missouri, a brick residence; to cost $5,000.

Milwaukee, Wis.—Architect W. A. Holbrook: For Rice & Friedman, a three-story store and flat building, 100 by 180 feet in size; stone and brick; cost $50,000. For Reilly Brothers, a four-story flat building, 60 by 60 feet in size; brick, with terra cotta trimmings and all modern improvements; cost $30,000.

Architect H. Russell: For C. D. Larkin, a four-story store building, brick and stone; to cost $25,000.

Pittsburgh, Pa.—Architect F. J. Osterling: For the Pittsburgh First Methodist Episcopal Church, a two-story stone church building, 200 by 200 feet in size, on the corner of Aiken avenue and Howe street; to cost $25,000.

Architect W. S. Fraser: For the Sixth U. P. Church, a one-story church building of rough stone; to cost $175,000.

St. Louis, Mo.—Architects A. Weiden & Son: For J. C. Somerville, a two-story brick and stone residence, size 46 by 53 feet; to cost $18,000.

Architect F. Thoms; For Mrs. E. W. Horstman, a two-story store and flat building, size 43 by 50 feet; to cost $10,000.

Architect M. T. O. Allardt: For R. B. Grant, three two-story dwellings, size 26 by by 58 feet, stone and brick; to cost $15,000.

H. E. Rost will build a four-story store and office building, brick and stone; to cost $40,000.

Contractors Borthe & Roberman: For Mrs. Brinkwarth, four three-story stone flats; on corner Cass avenue and Hogan street; to cost $39,000.

St. Paul, Minn.—Architect J. Walter Stevens reports plans for a five-story brick and stone building for the Kouantz Saddlery Company, 50 by 100 feet, near the corner of Sixth and Wacouta streets; to cost $40,000. Also for an eight-story brownstone business block on Fourth street, between Cedar and Minnesota streets, to be made ready for occupancy when two stories are built.

Architect A. F. Gauger reports plans for a four-story brick and stone business building on Wabasha street, near Eighth street, 25 by 150 feet; to cost $25,000. Plans are also drawn for a two-story brick block on the corner of St. Peter and Exchange streets; to cost $10,000; Phillip Potts is the owner.

Architect Herman Koetz has completed plans for a three-story brownstone apartment house on Summit avenue, between St. Peter and Rice streets; to cost $35,000; to be built by Judge C. E. Otis. Also for a six-story brownstone apartment house, 60 by 180 feet, on Summit avenue, near Sixth street, for Ross Clarke; to have all modern improvements, and to cost $150,000. Also two brownstone dwelling houses for Joseph Lockey, on Summit avenue, near St. Albans street; to cost $25,000, and to have hardwood finish, plate glass and all modern improvements. Also a $24,000 stone and brick church at Hastings, Minnesota, for the St. Boniface Society, and an eight-room school building for St. Michael's parish, Stillwater, Minnesota; to be of brick and stone, and to cost $20,000.

Architect Cass Gilbert is preparing plans for a brownstone residence to be erected by W. H. Lightner, on Summit avenue, opposite Farrington.

Architects Reed & Stem have just completed plans for a temporary auditorium building, 150 by 150 feet, on Eighth and Ninth streets, between Cedar and Minnesota streets; it will be of frame, with façades covered with staff; it is to be erected for the St. Paul Auditorium Company.



ROW OF RESIDENCES, CHICAGO.

Burnham & Root, Architects.

Inland Architect Press.

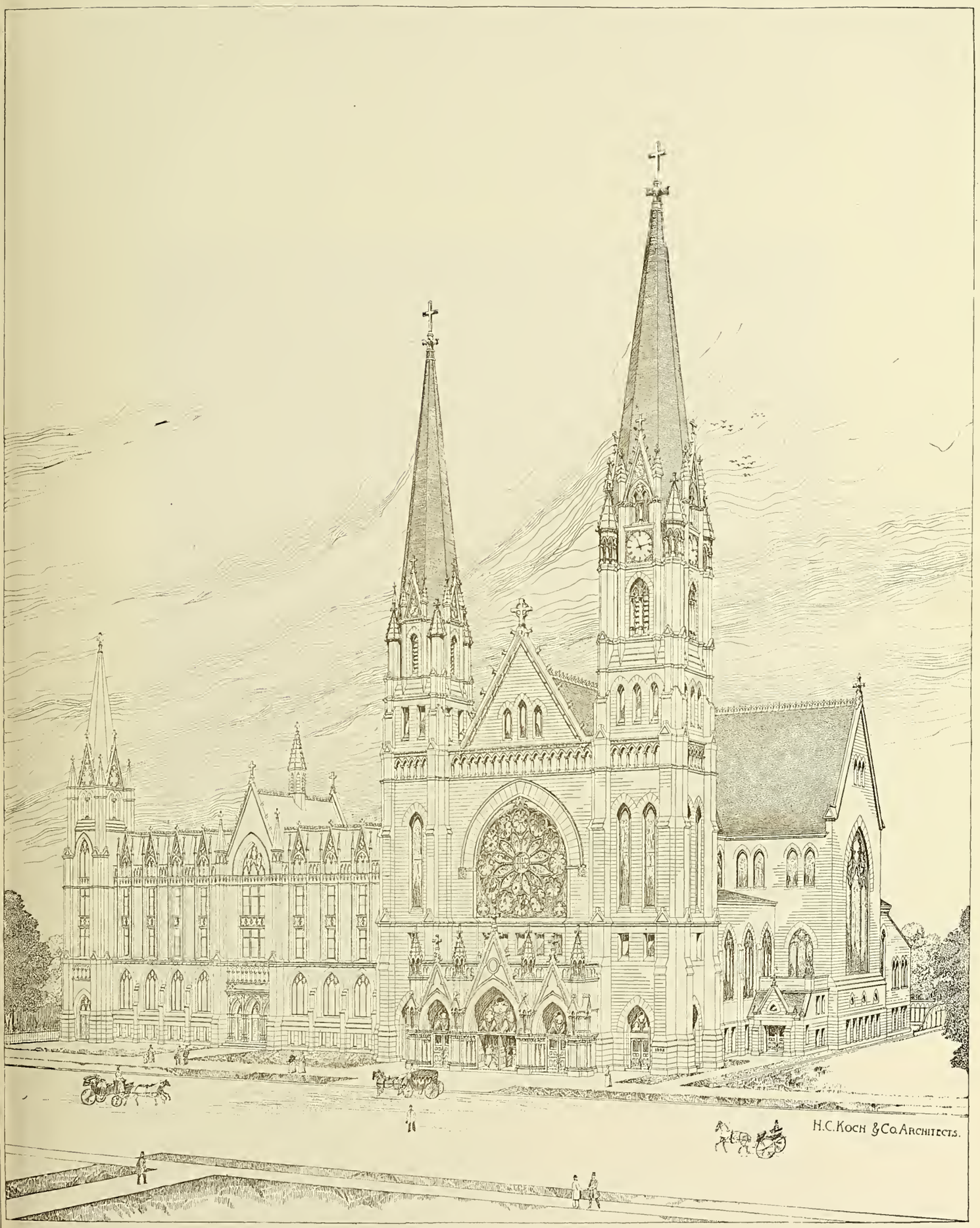


KIRSCHBAUM BUILDING, PHILADELPHIA.

FRANK R. WATSON, ARCHITECT.

CATHEDRAL of the SACRED HEART
AND
Episcopal Residence
DULUTH, MINN.
G.A.TENBUSCH ARCHITECT.





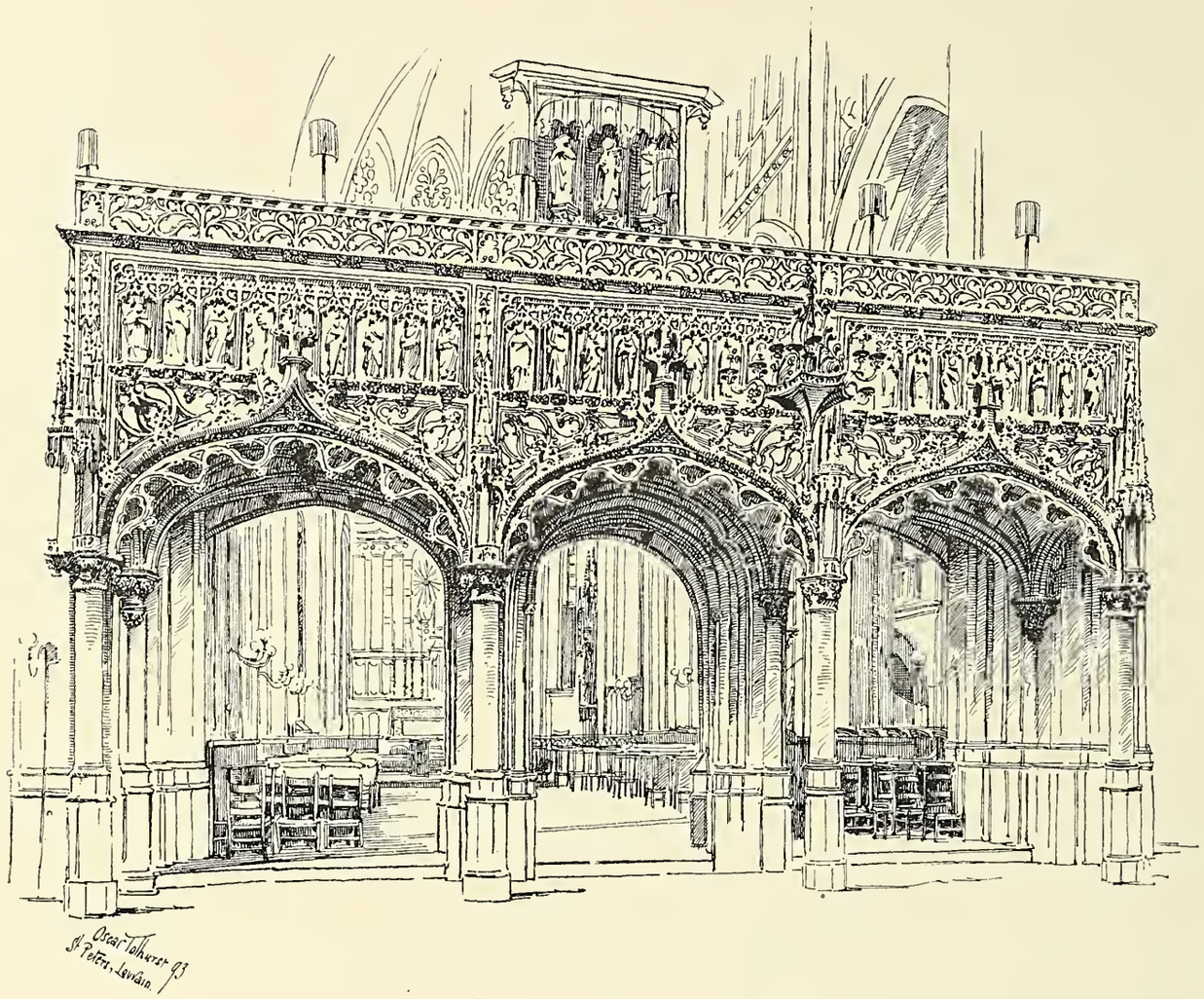
THE GESU, MILWAUKEE, WISCONSIN.

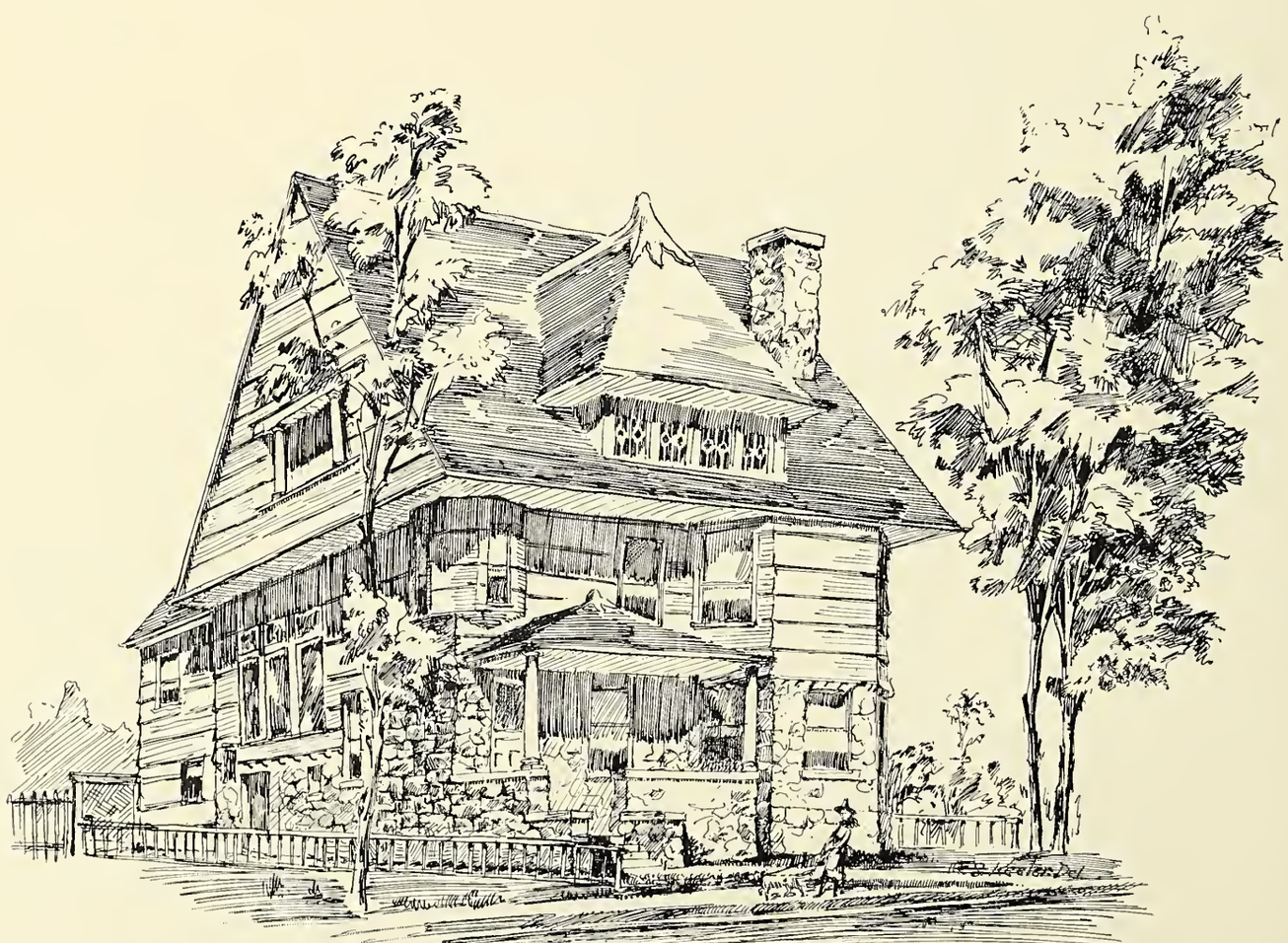
H. C. KOCH & Co., ARCHITECTS.



DECORATIVE GLASS WINDOW—A ROMAN CHARIOT RACE.

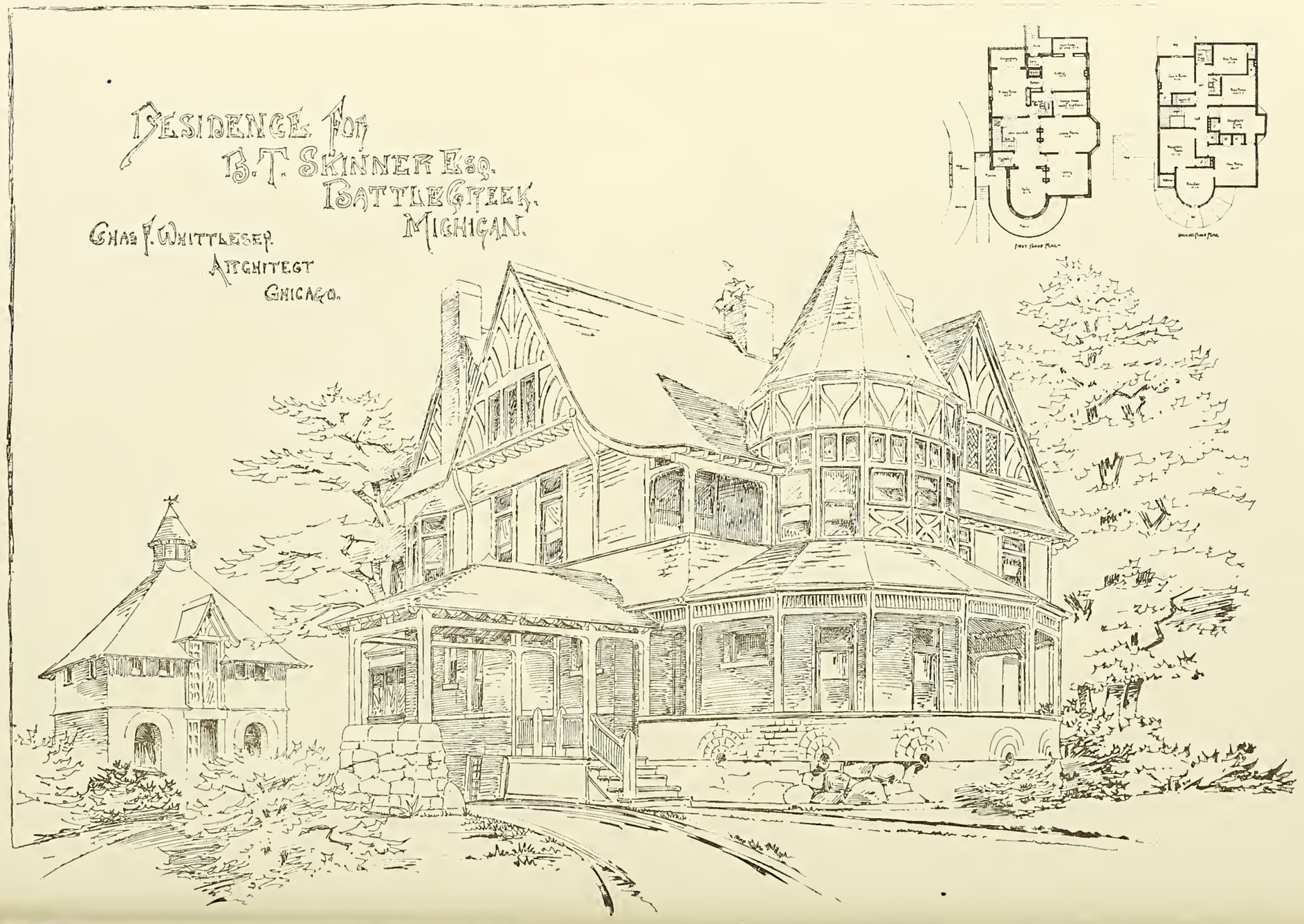
The exhibit of GEORGE E. ANDROVETTE & Co., Chicago, at the World's Columbian Exposition.

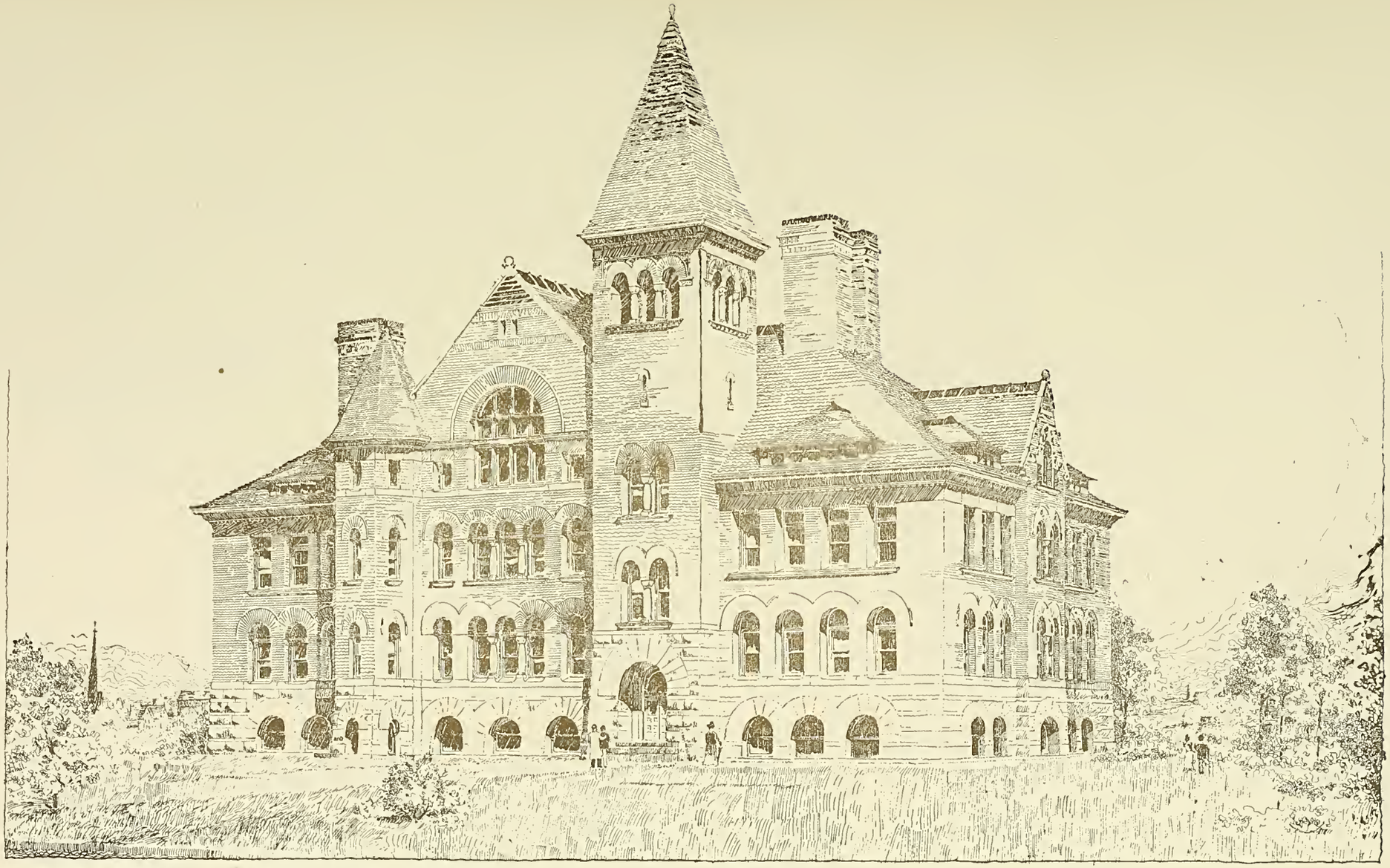




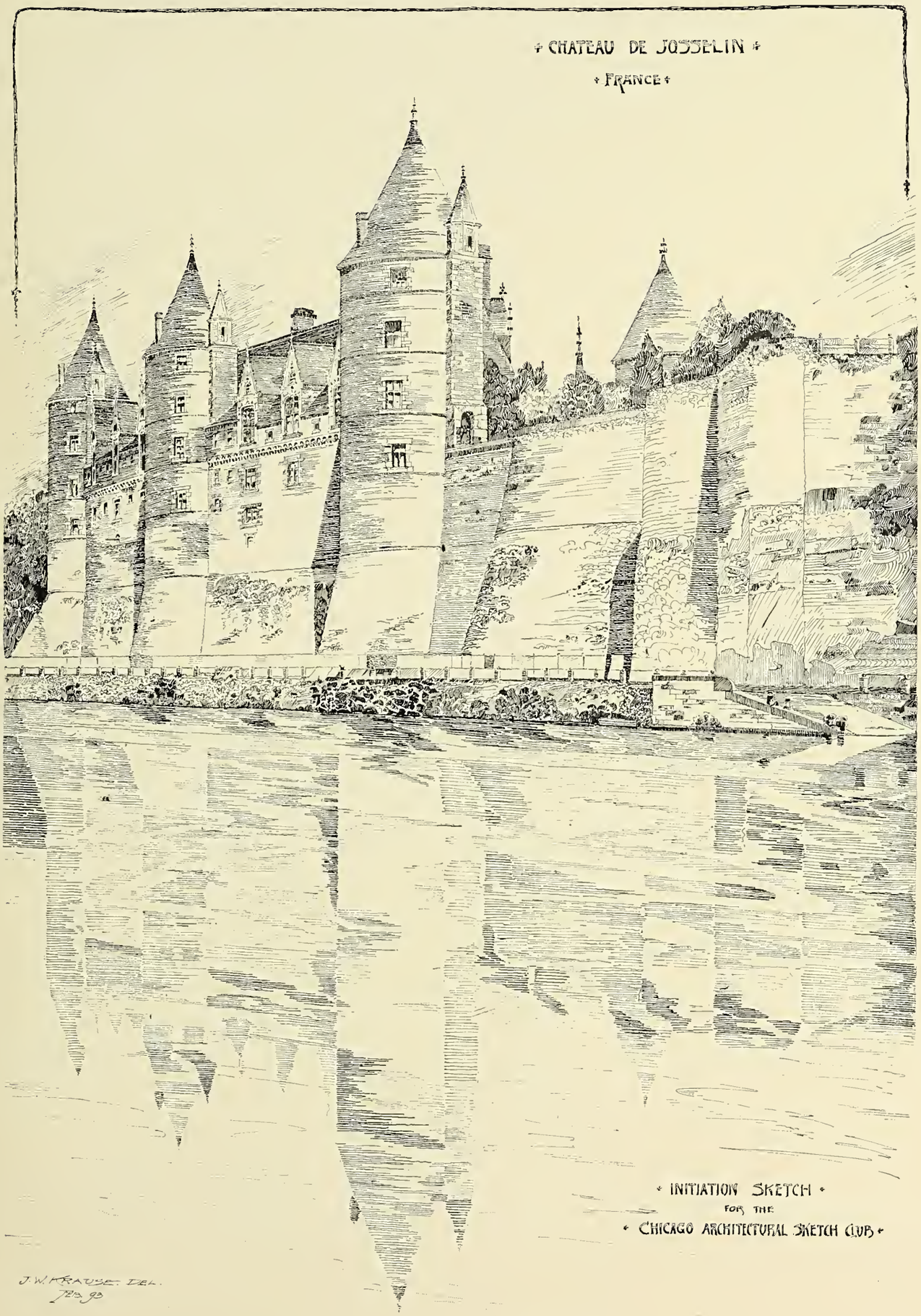
HOUSE FOR MR. A. BURTIS —
BUFFALO — N.Y.

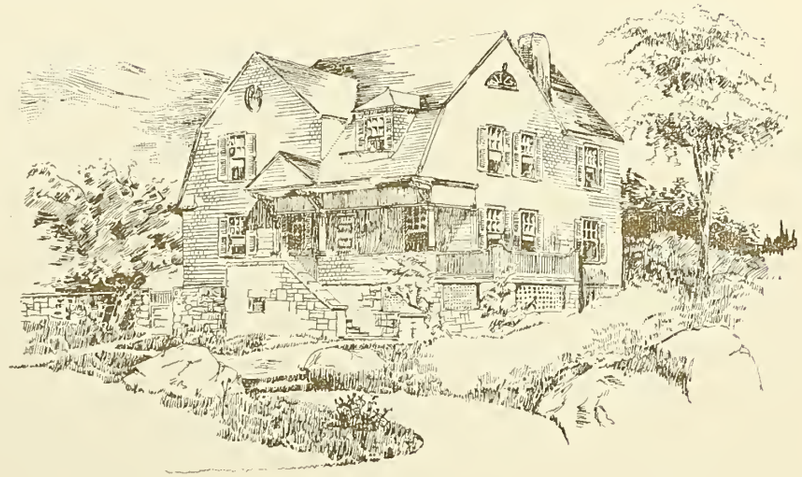
E. A. Kent - Archt. Buffalo - N.Y.

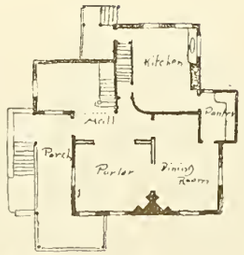

Residence For
B. T. Skinner Esq.
Battle Creek.
Michigan.
Chas F. Whittlesey.
Architect
Chicago.

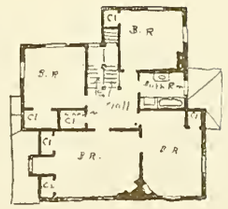


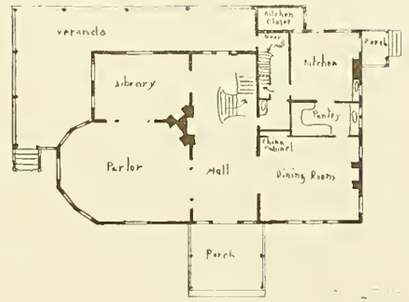
HIGH SCHOOL AT MUSKEGON MICHIGAN. ✲ ✲ PATTON AND FISHER . ARCHITECTS . CHICAGO . ✲

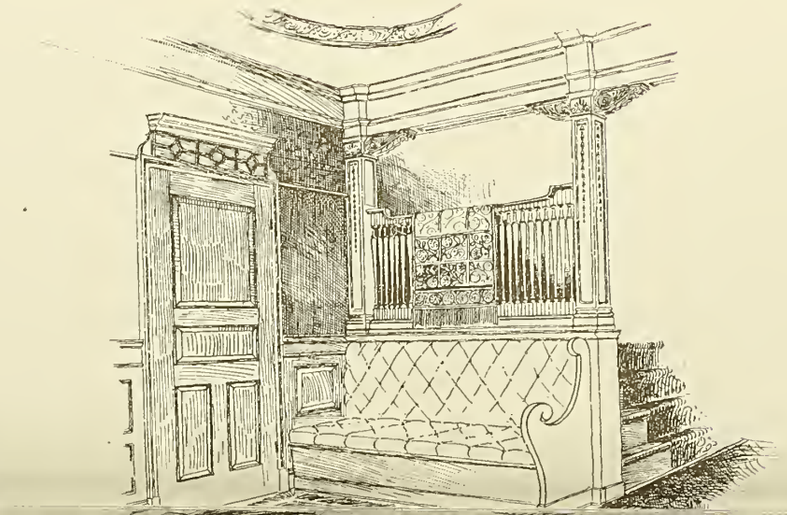

CHATEAU DE JOSSELIN
FRANCE
INITIATION SKETCH
FOR THE
CHICAGO ARCHITECTURAL SKETCH CLUB
J. W. KRAUSE. DEL.
FEB. 93

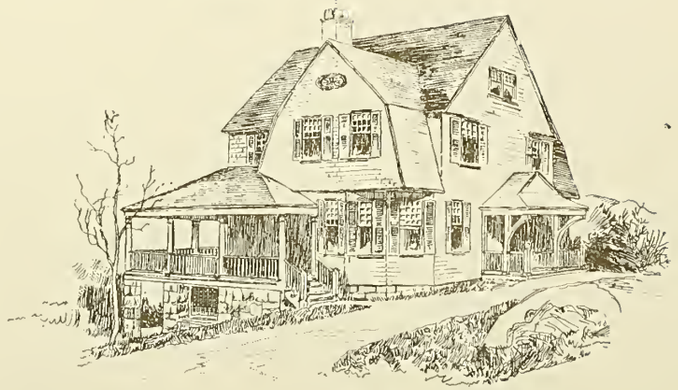



Kitchen
Hall
Pantry
Porch
Parlor
Dining Room


C1
B.R
S.R
Hall
C1
C1
B.R.
D.R
C1

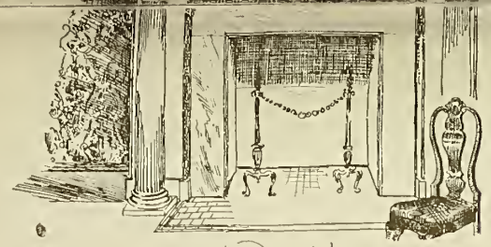

veranda
Kitchen Closet
Porch
Kitchen
Library
Pantry
Parlor
Hall
Dining Room
Porch





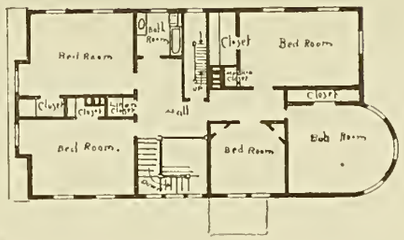


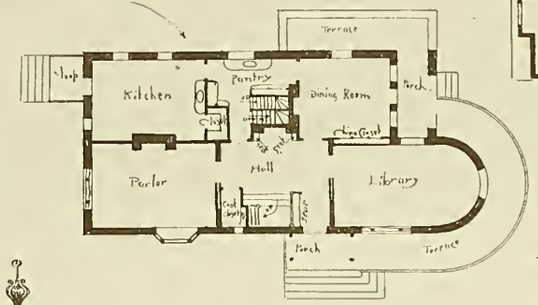
E.G.W.Dietrich · Architect · 18 Broadway ·
New York ..... N.Y.



Parlor Mantel

Hall

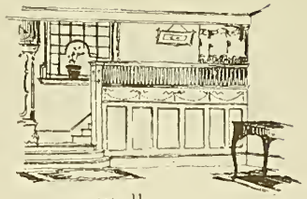




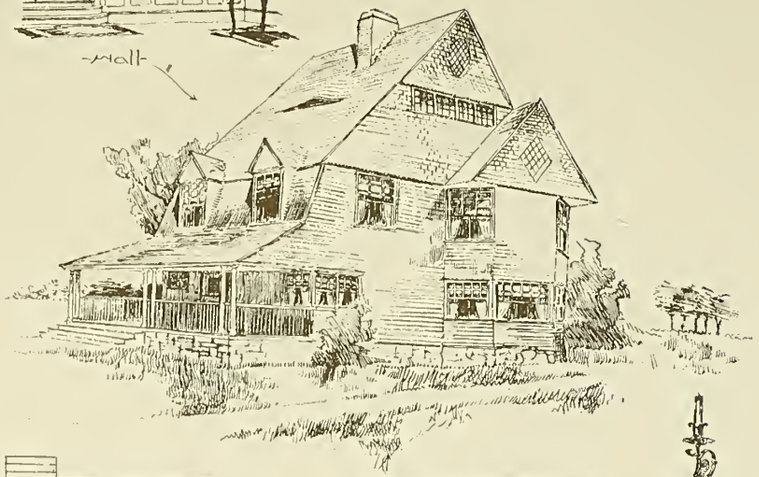
Hall Gas Bracket

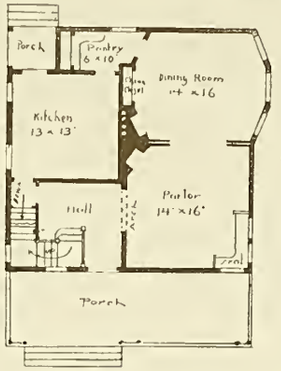


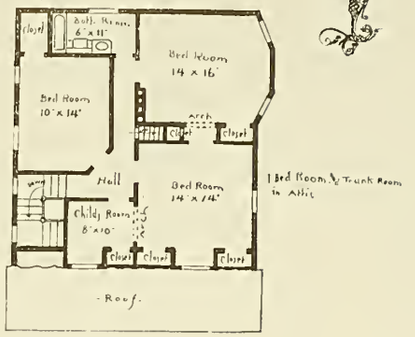




Hall







1 Bed Room & Trunk Room in Attic











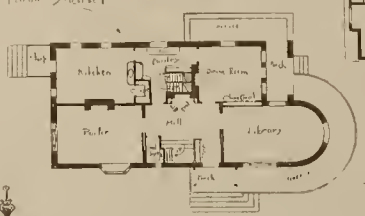




Hall

G W Dietrich Architect 18 Broadway
New York ..... N Y







Hall

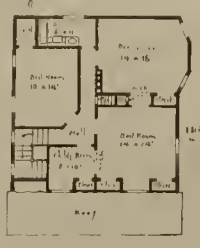


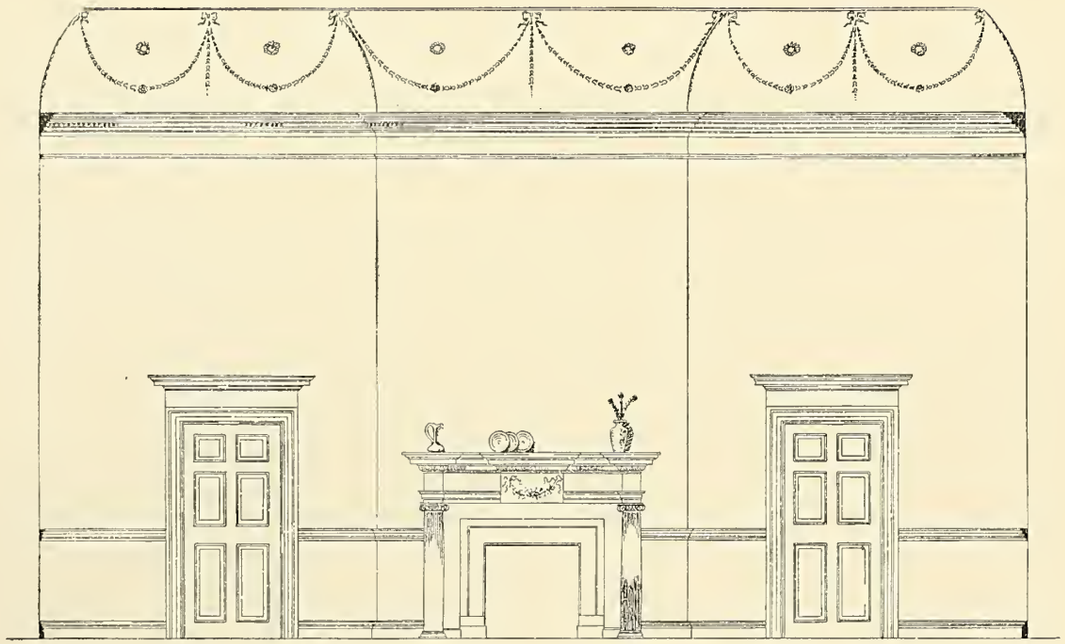
Lamp Bracket

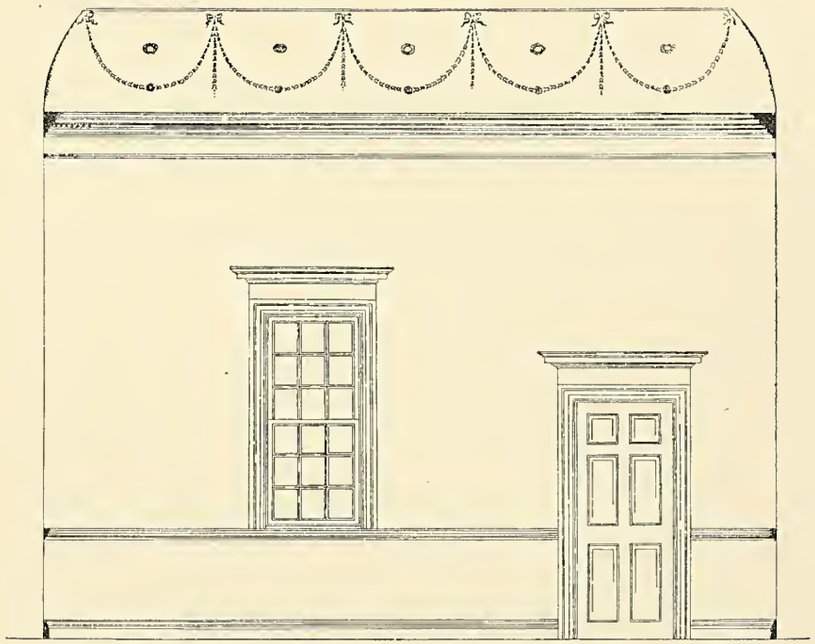


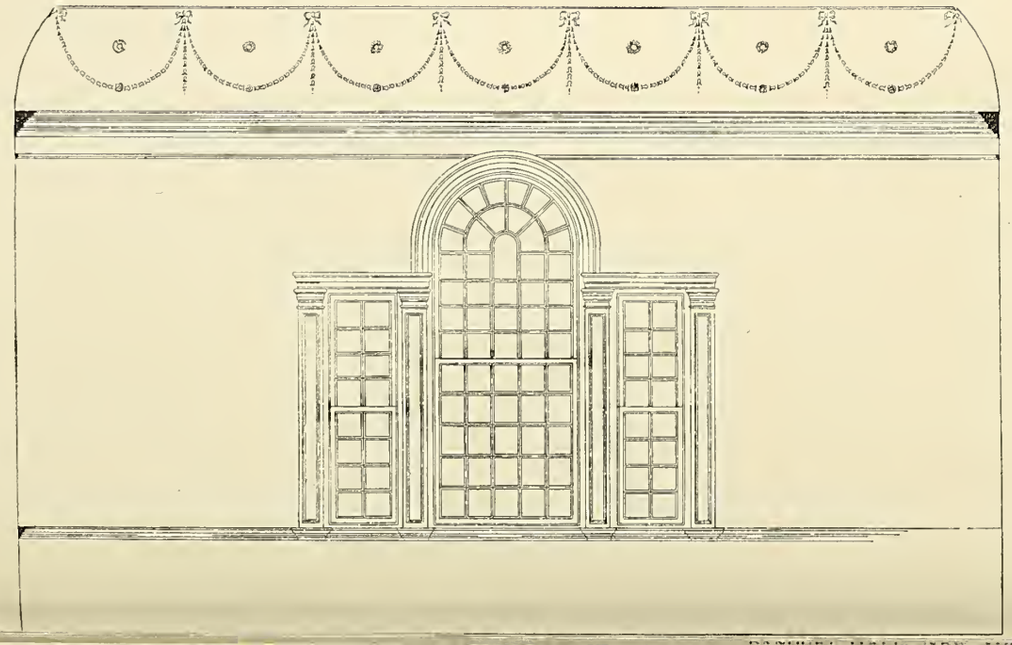


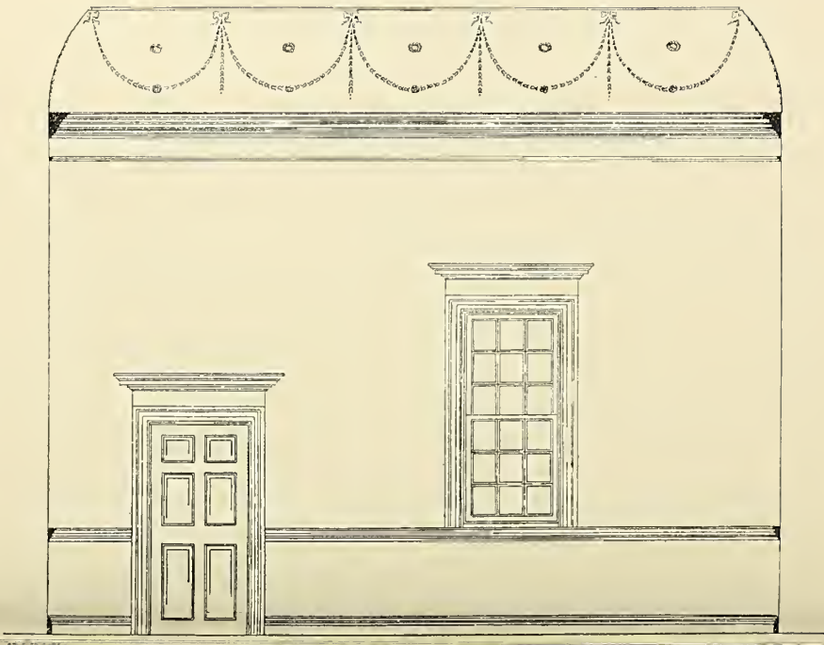


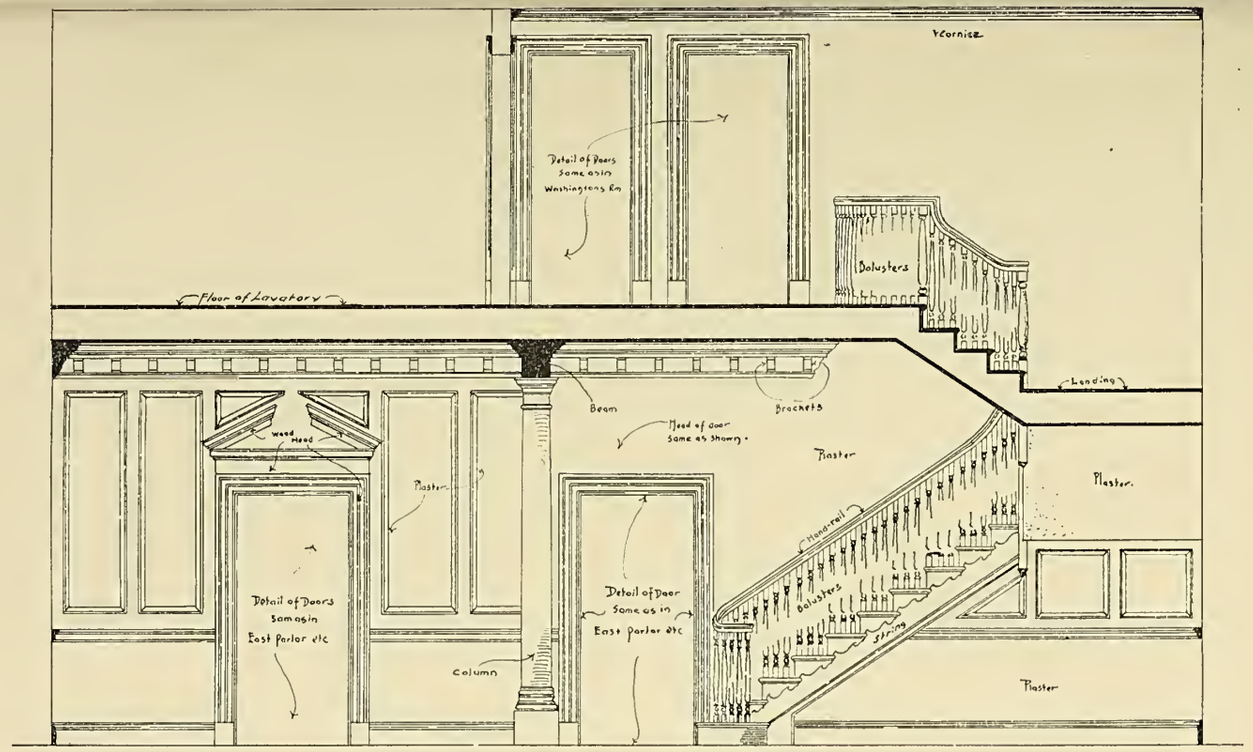




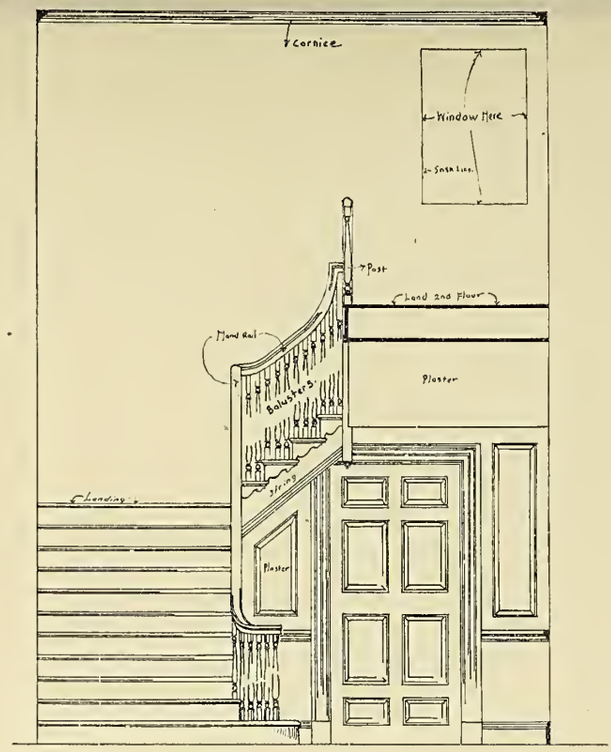




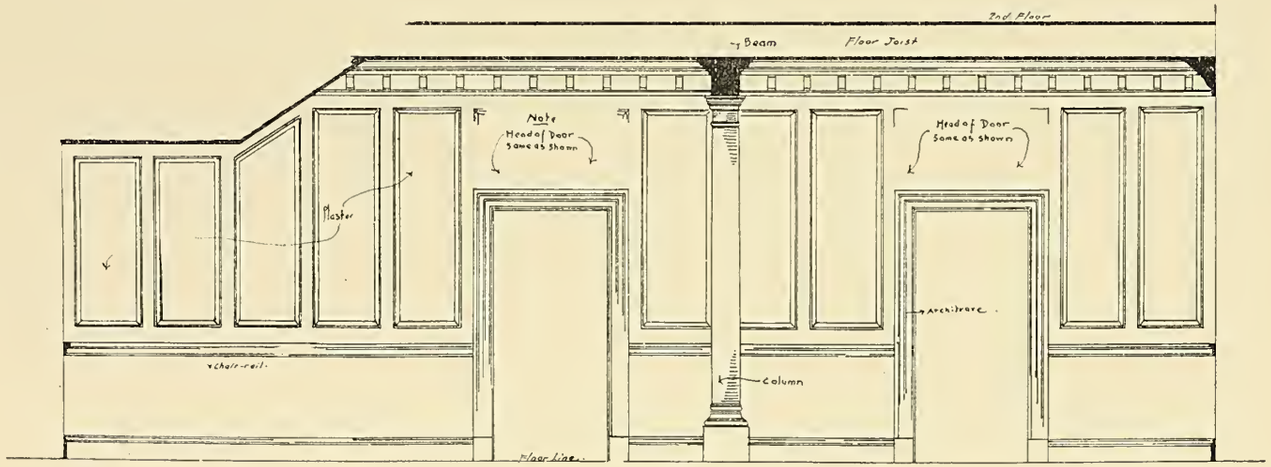




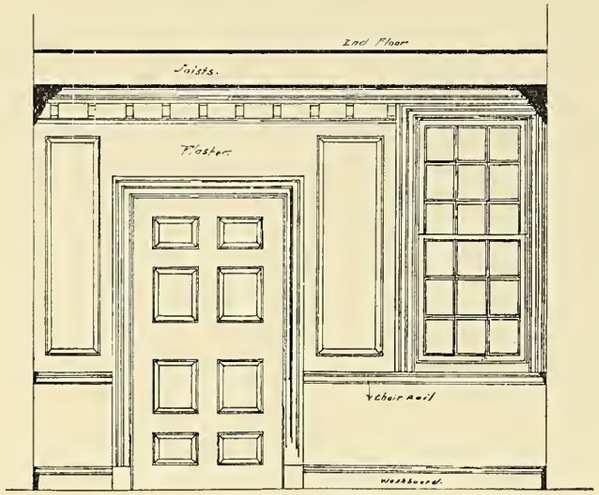
Side Elevation of Stairway



Front View of Stairs.



Side Elevation.

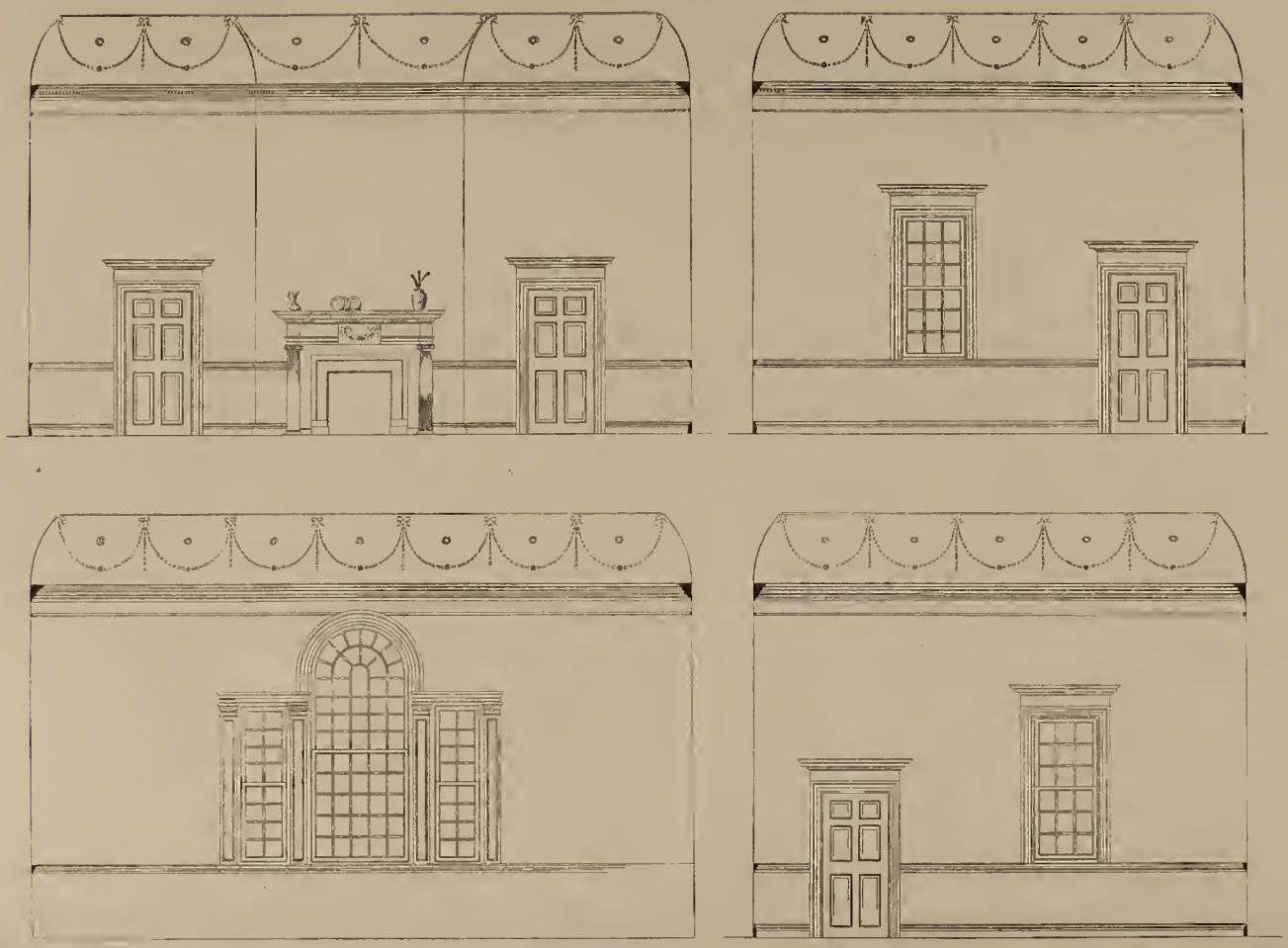


Elevation towards Front Door.

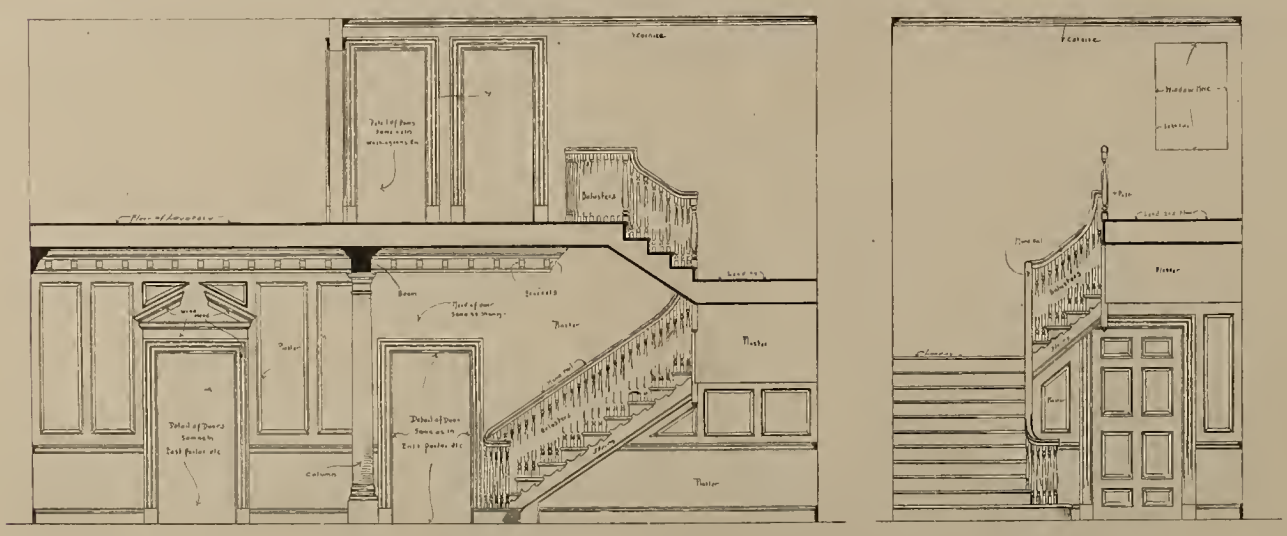
MAIN HALL.

DETAILS OF THE HOME OF WASHINGTON, MOUNT VERNON, VIRGINIA.

Reproduced for Virginia State Building, at World's Columbian Exposition, Chicago. From measured drawings by EDGERTON S. ROGERS, Architect, Richmond, Virginia.

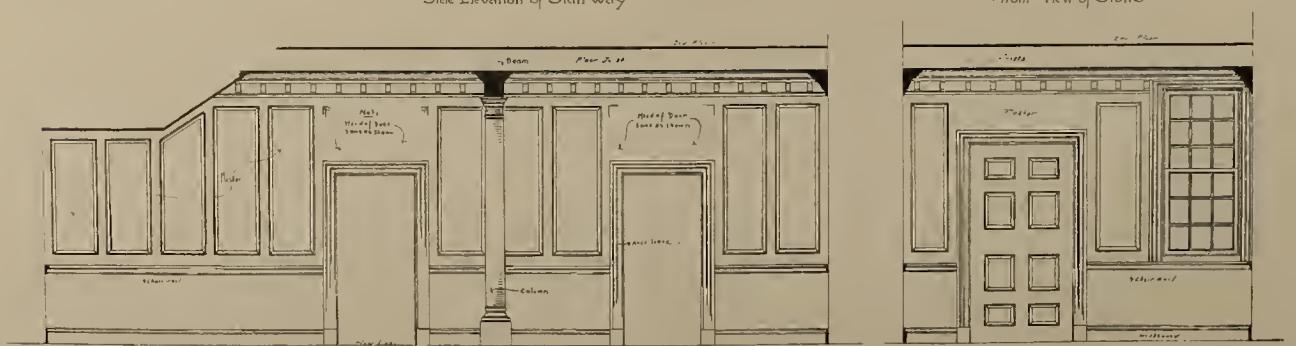


Banquet Hall, New York Room.



Side Elevation of Stairway

Front View of Stairs



Side Elevation.

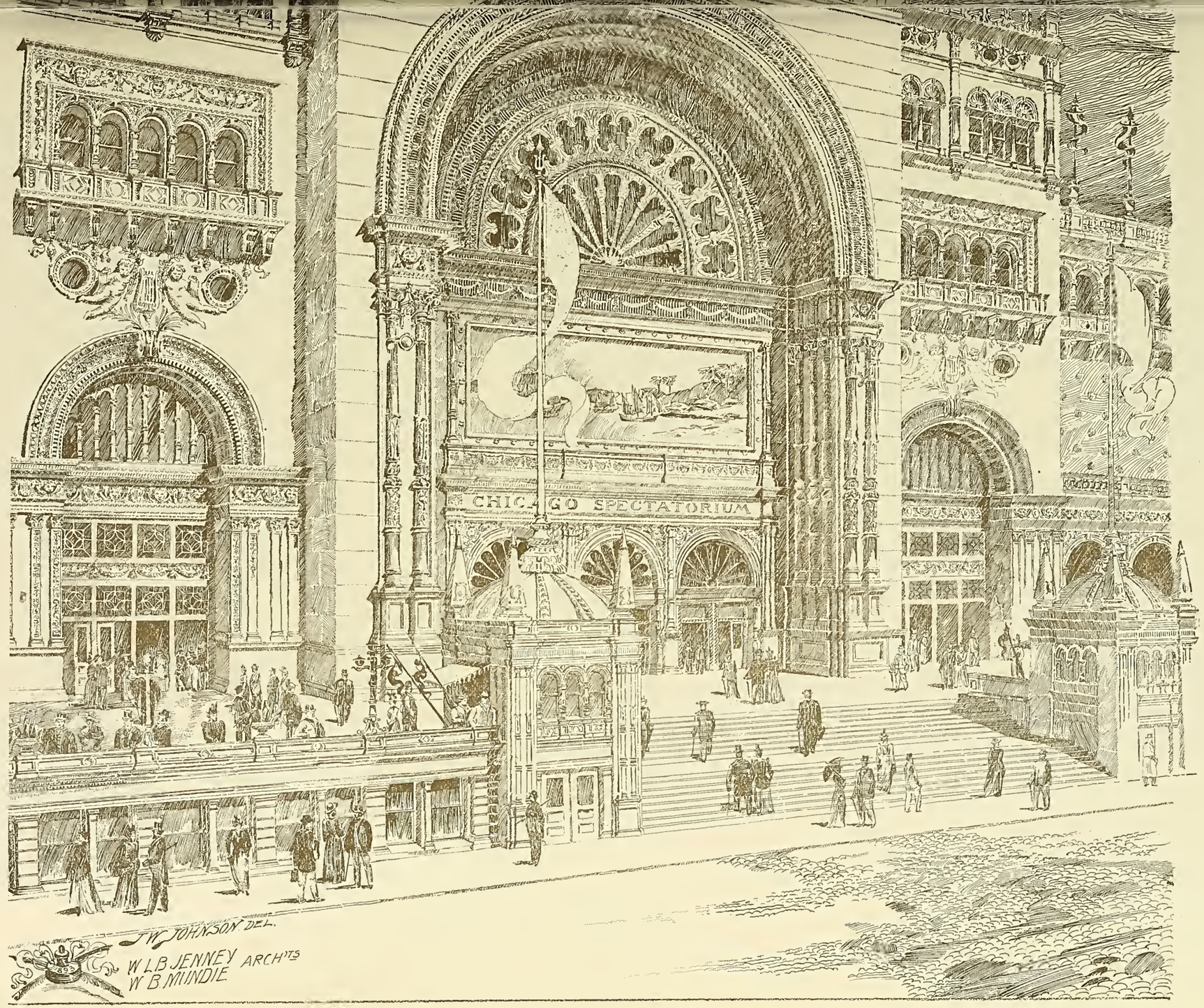
Elevation towards Front Door.

Main Hall.

DETAILS OF THE HOME OF WASHINGTON, MOUNT VERNON, VIRGINIA.

Reproduced for Virginia State Building, at World's Columbian Exposition, Chicago. From measured drawings by Edgerton S. Rogers, Architect, Richmond, Virginia.





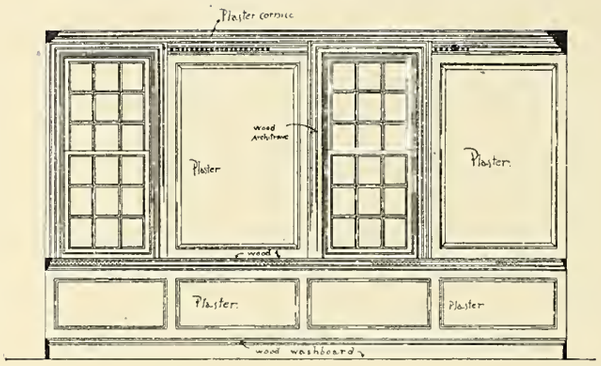
THE CHICAGO SPECTATORIUM, FIFTY-SIXTH STREET AND THE LAKE, CENTRAL PAVILION AND GRAND ENTRANCE.

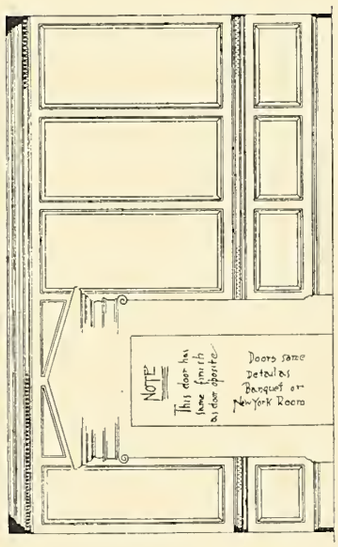
W. L. B. Jenney and W. B. Mundie, Architects.

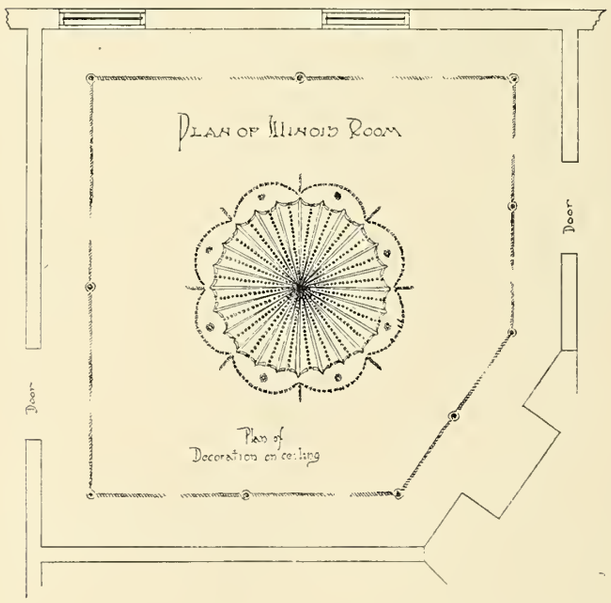


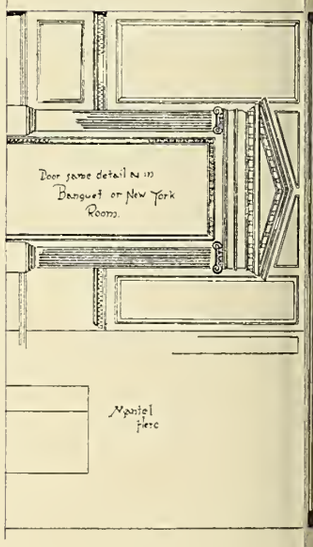
THE CHICAGO SPECTATORIUM, FIFTY-SIXTH STREET AND THE LAKE, CENTRAL PAVILION AND GRAND ENTRANCE.

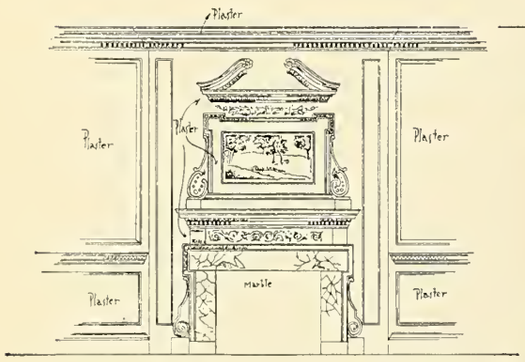
W. L. B. Jenney and W. B. Mundie, Architects.

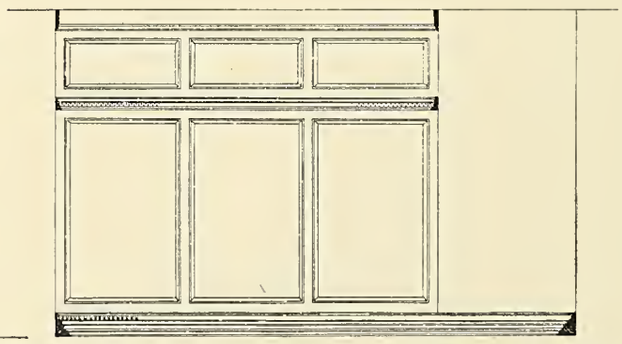






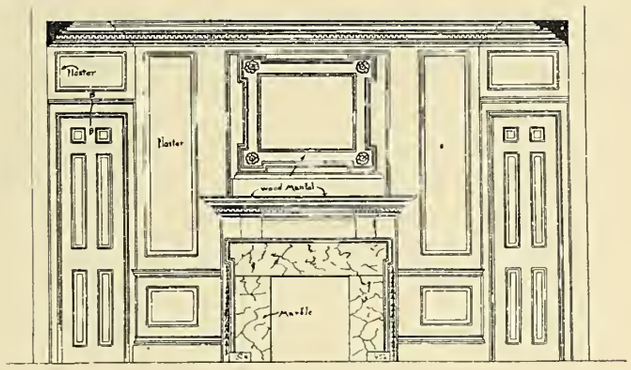




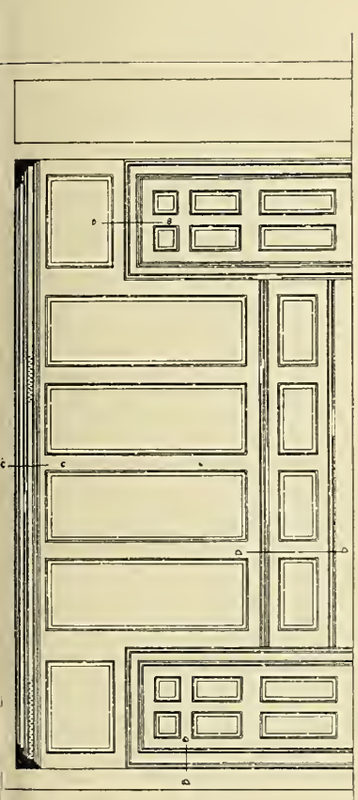


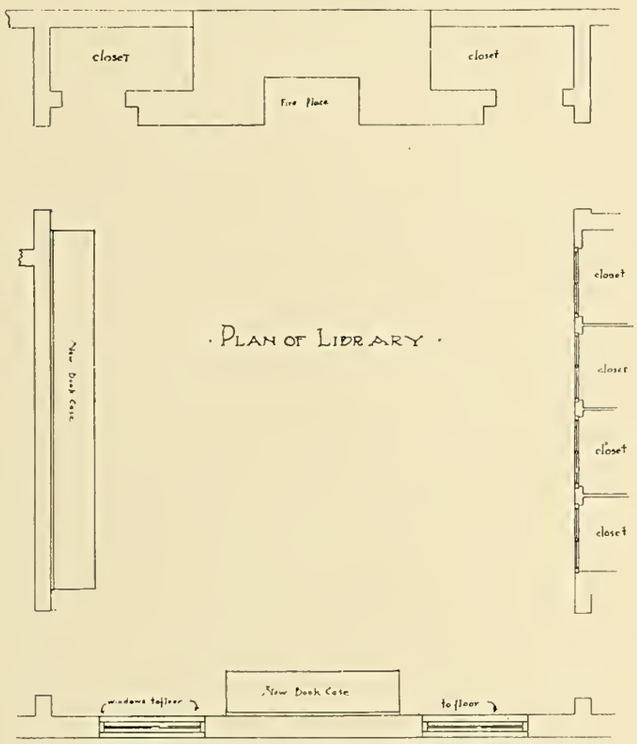
DETAILS OF THE HOME OF WAS

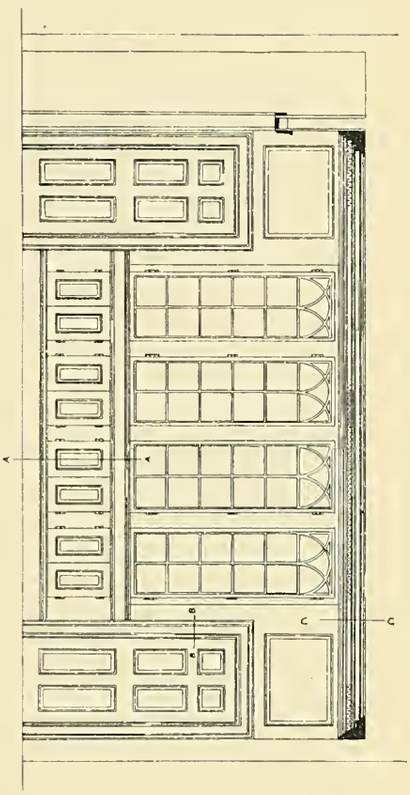
Reproduced for Virginia State Building, World's Columbian Exposition, Chicago

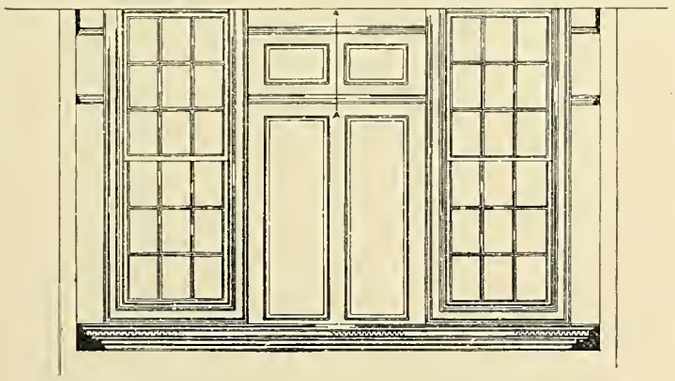


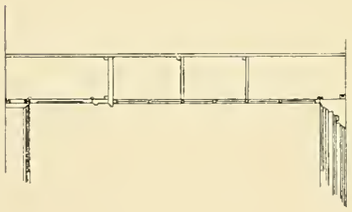
MANTEL ELEVATION





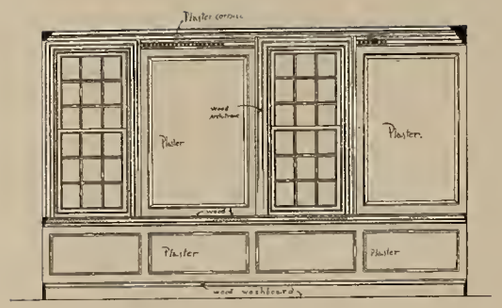


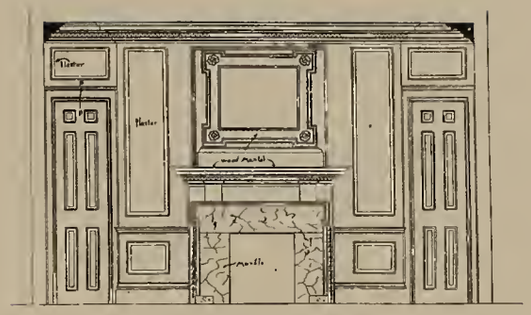




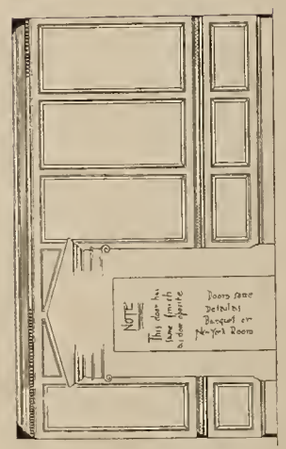
GTON, MOUNT VERNON, VIRGINIA.

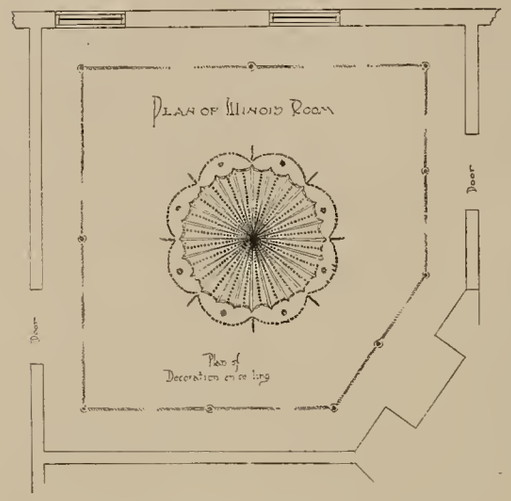
From measured drawings by EDGERTON S. ROGERS, Architect, Richmond, Virginia.

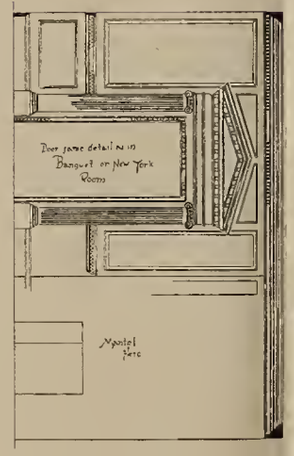


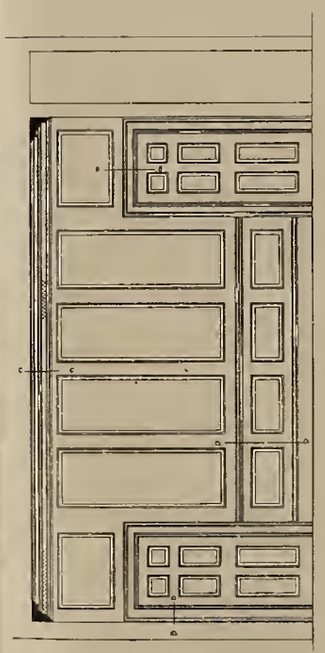


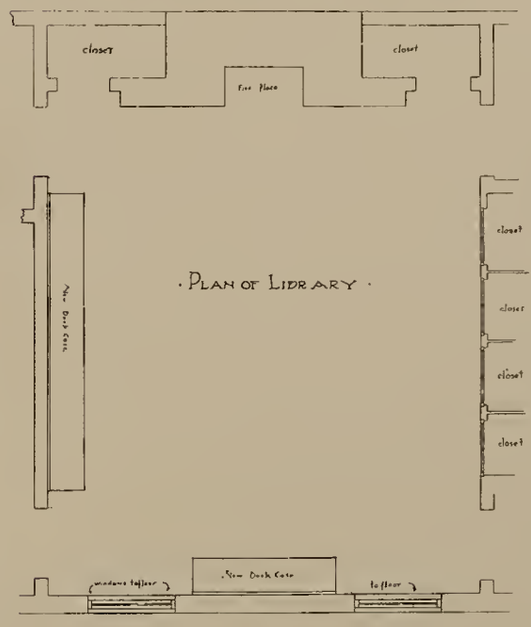
· MANTEL ELEVATION ·

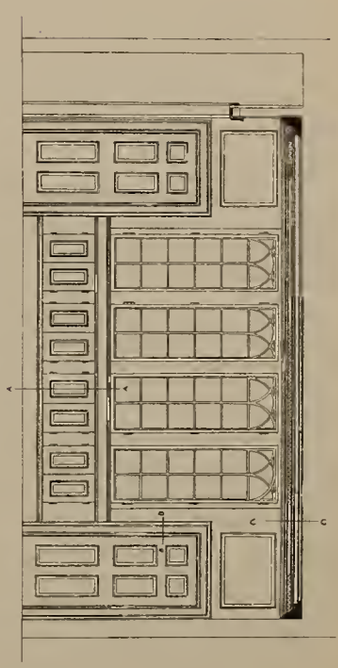


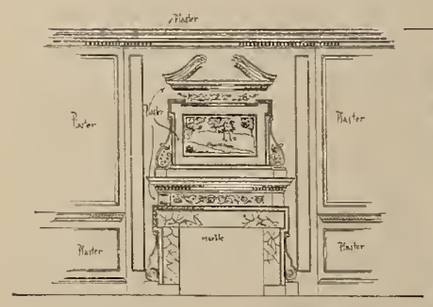


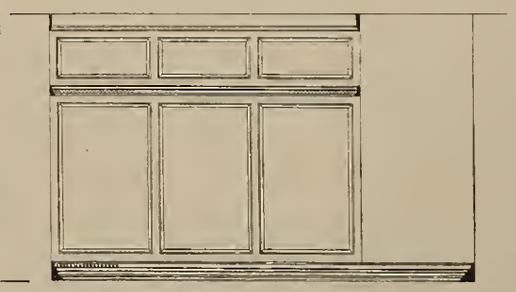


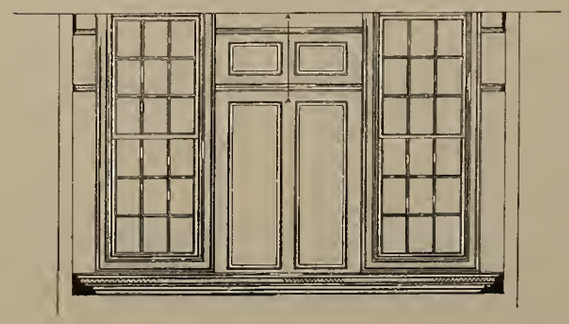














DETAILS OF THE HOME OF WASHINGTON, MOUNT VERNON, VIRGINIA.

Reproduced for Virginia State Building, World's Columbian Exposition, Chicago. From measured drawings by EDGERTON S. ROGERS, Architect, Richmond, Virginia.

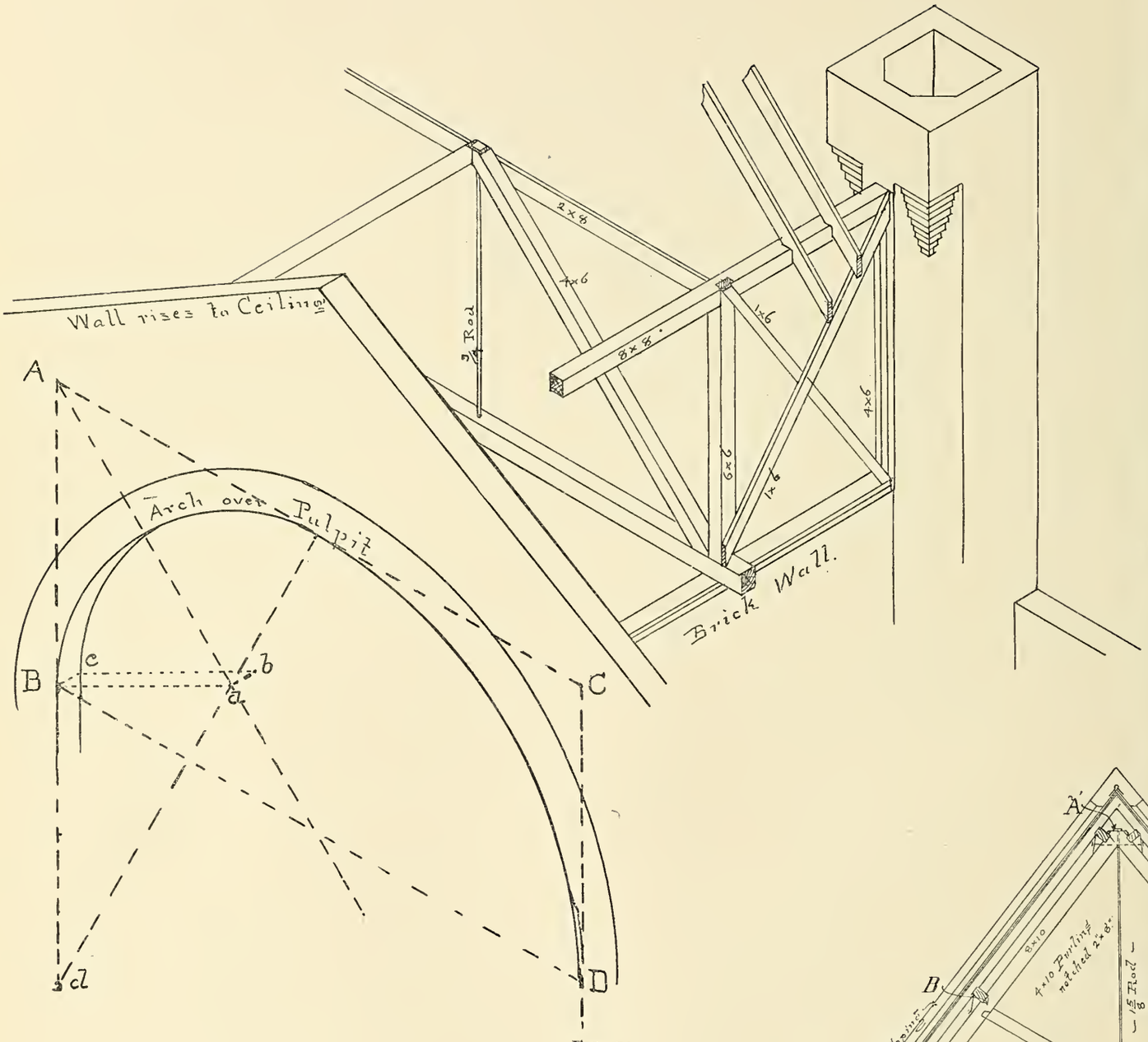


FIG. 74.

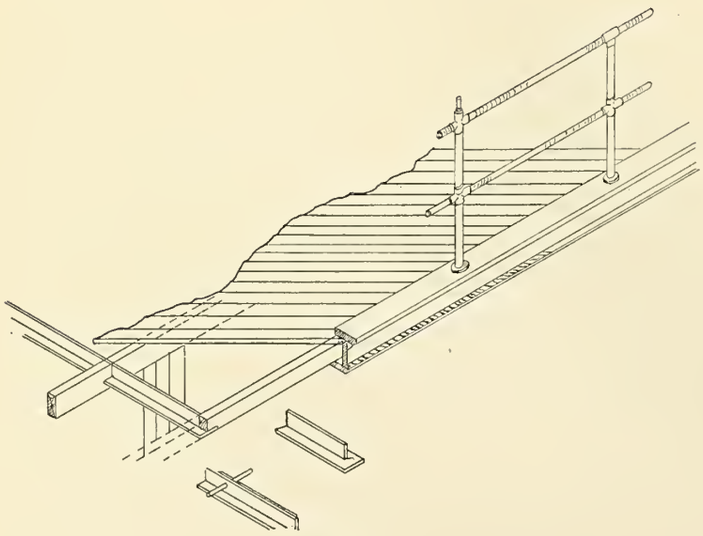


FIG. 70.

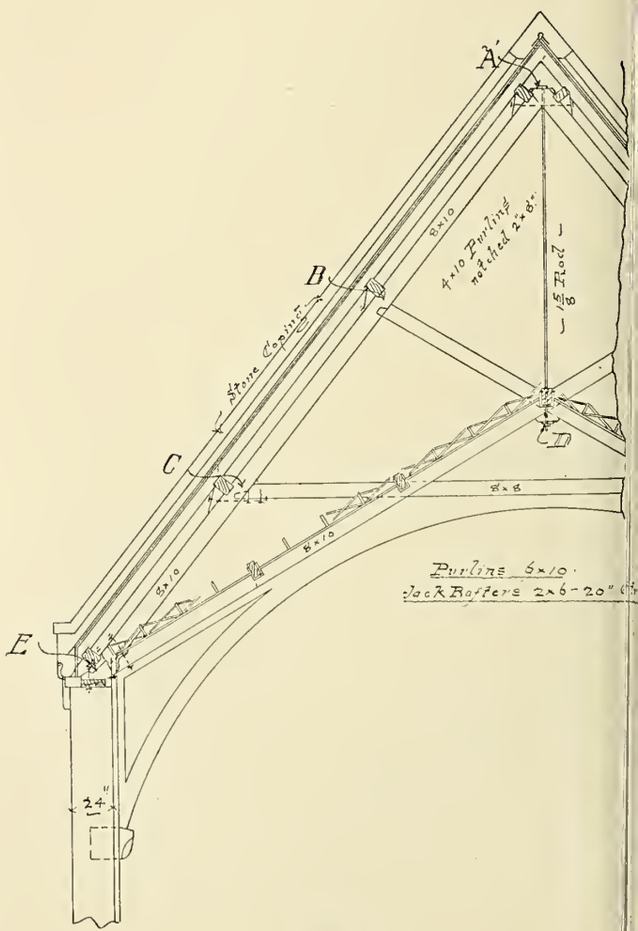


FIG. 69.

DIAGRAMS ILLUSTRATING "DIRECT METHODS IN ARCHITECTURAL

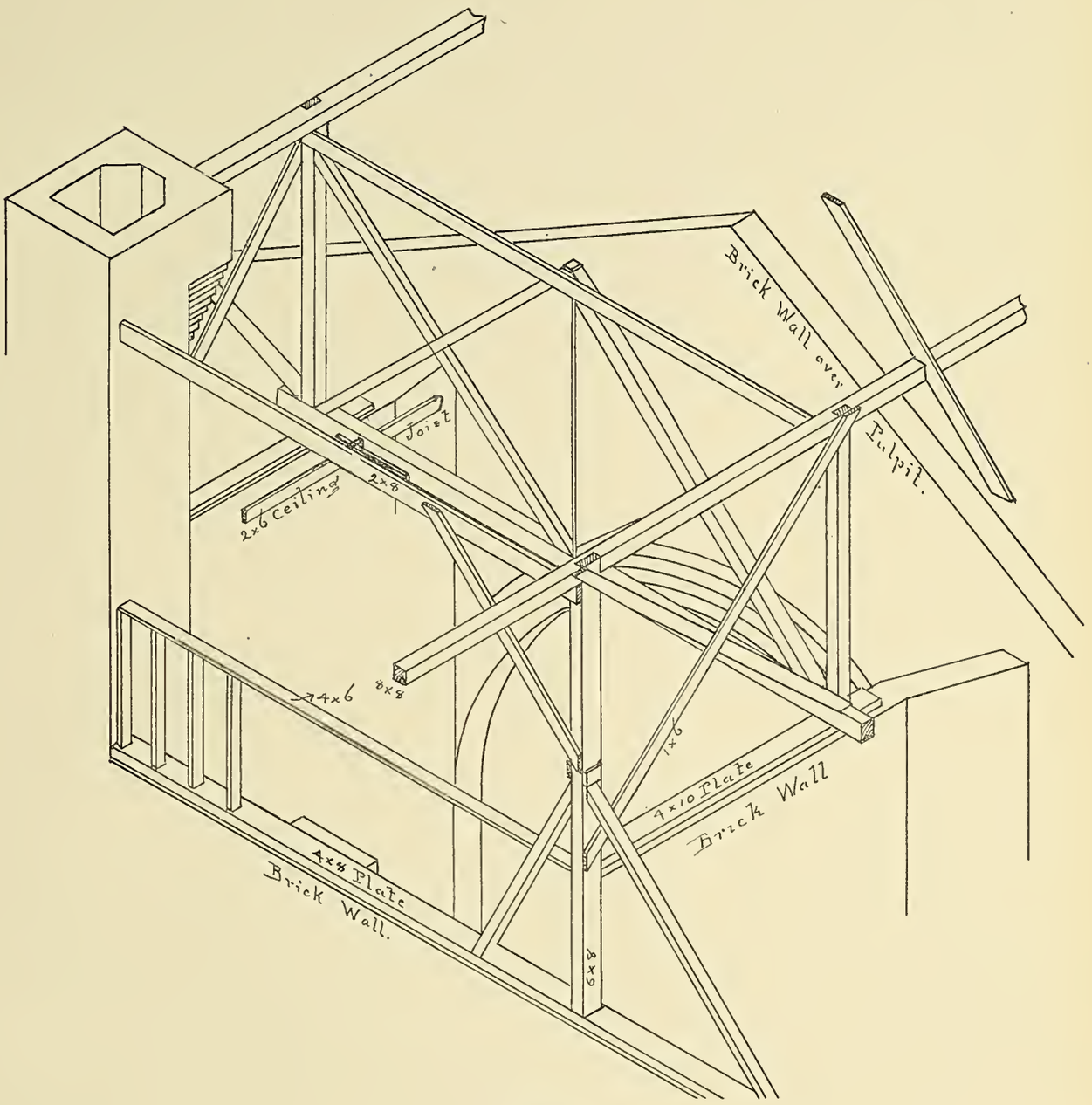


FIG. 75.

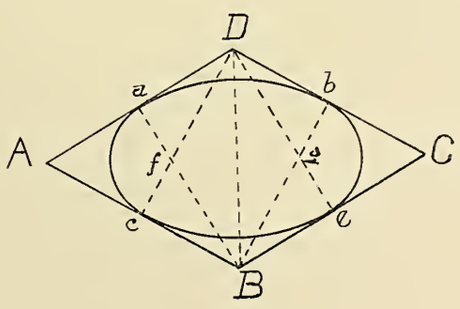


FIG. 71.

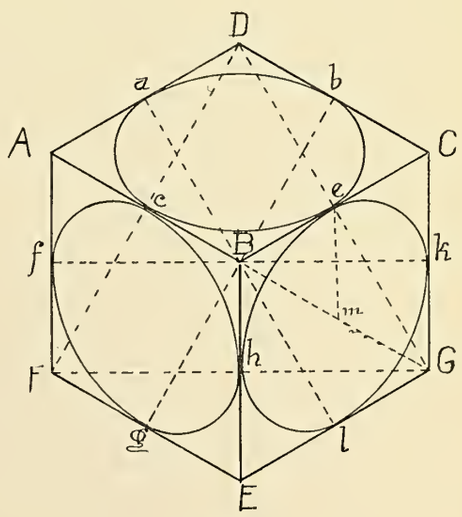


FIG. 72.

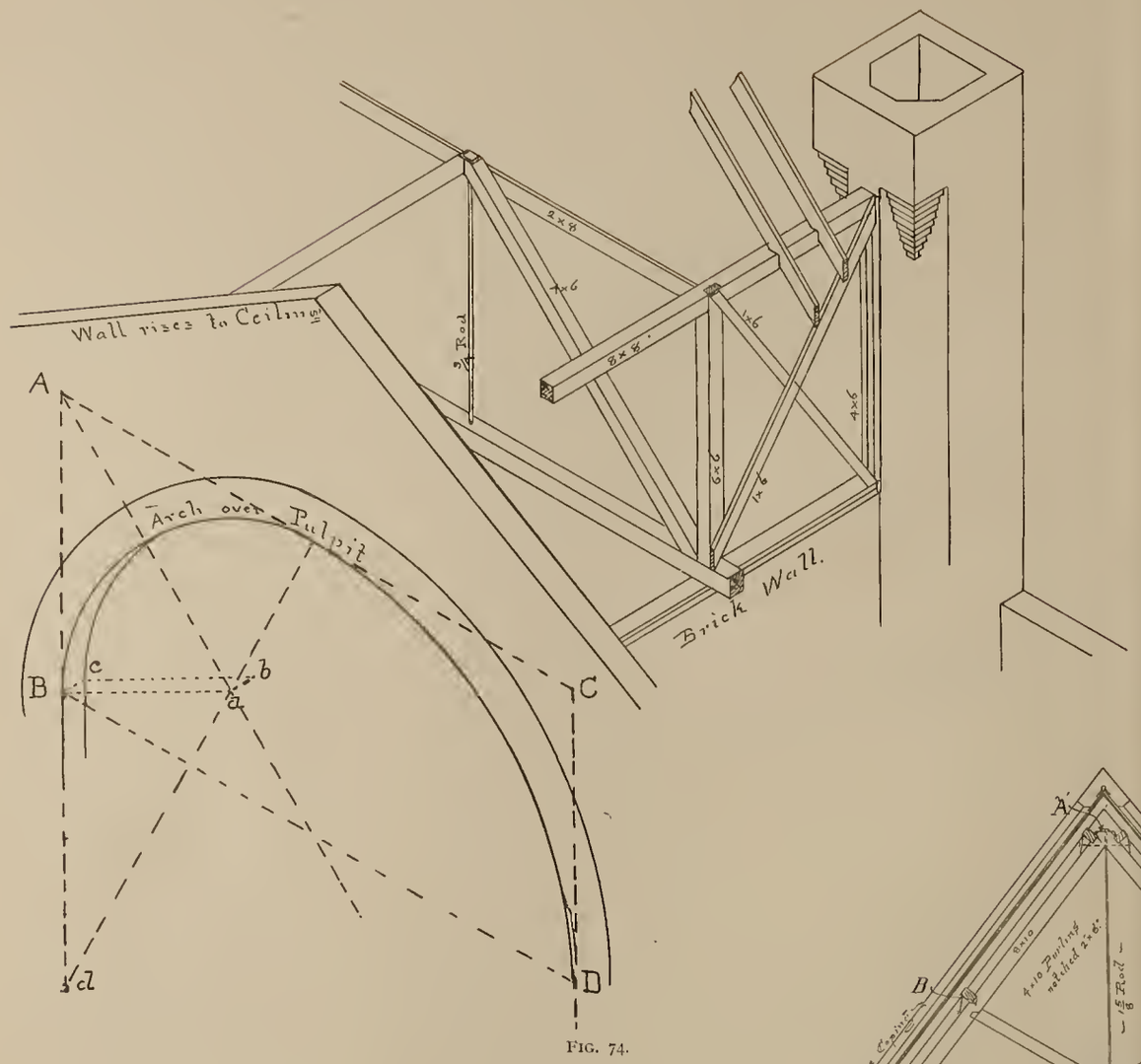


FIG. 74.

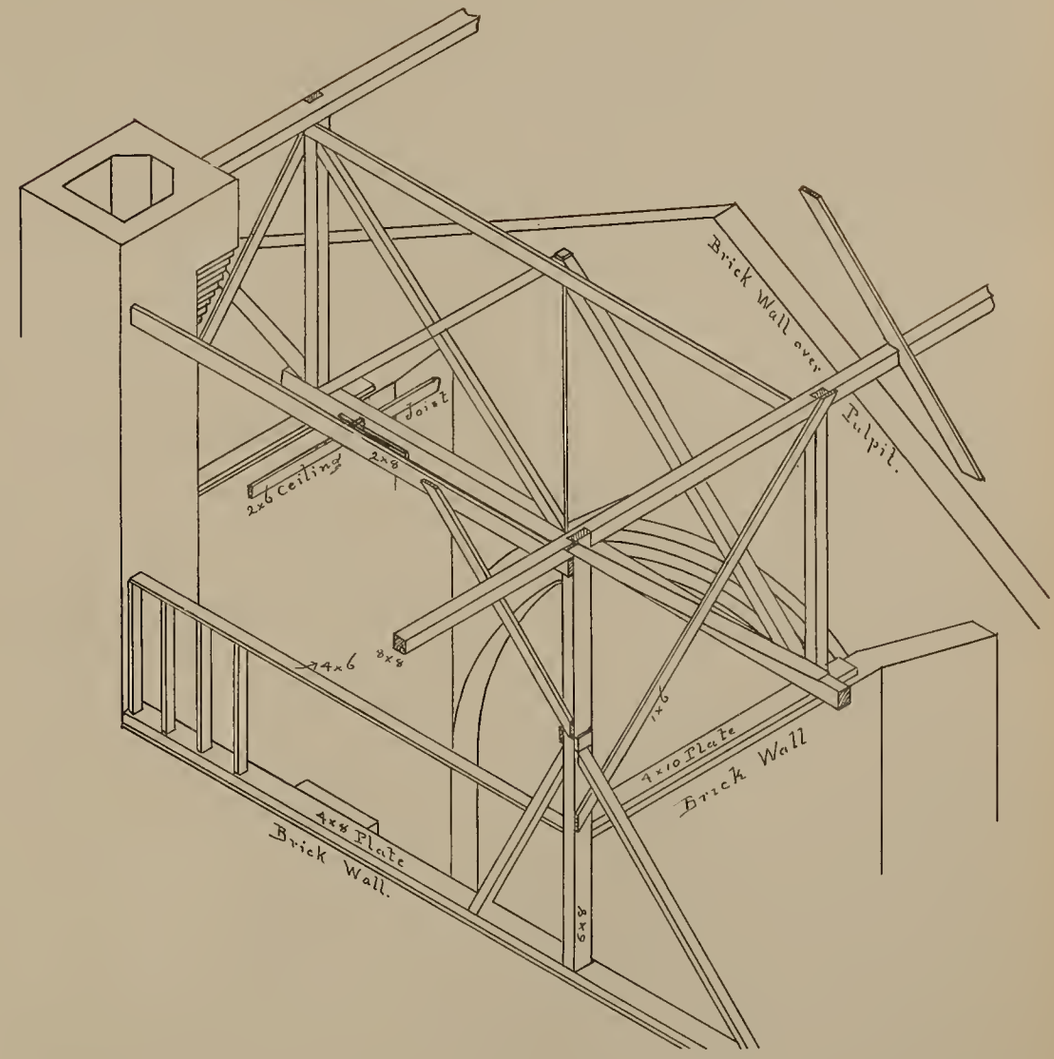


FIG. 75.

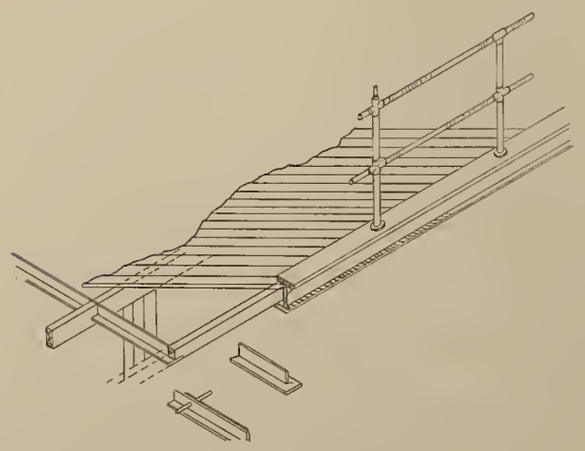


FIG. 70.

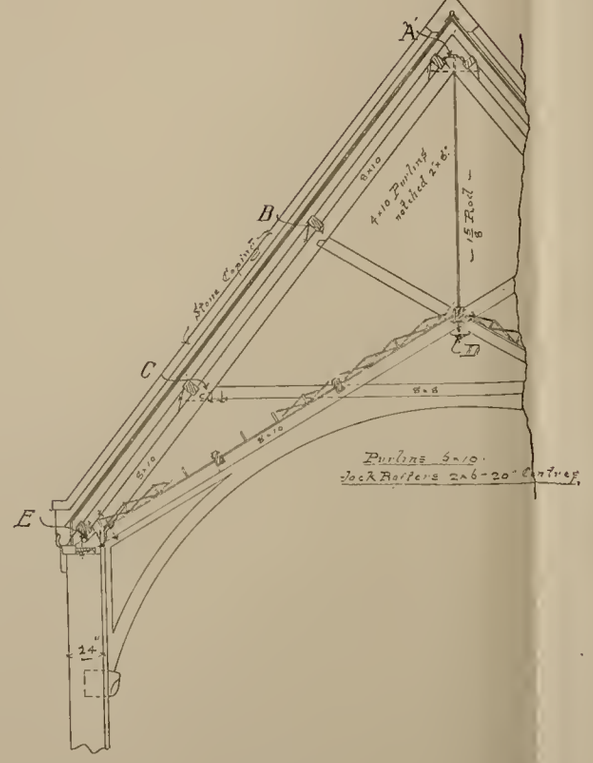


FIG. 69.

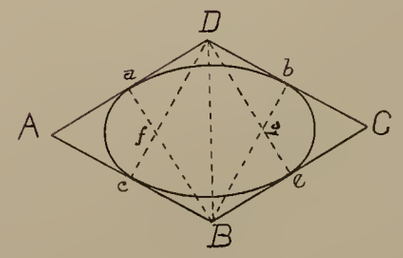


FIG. 71.

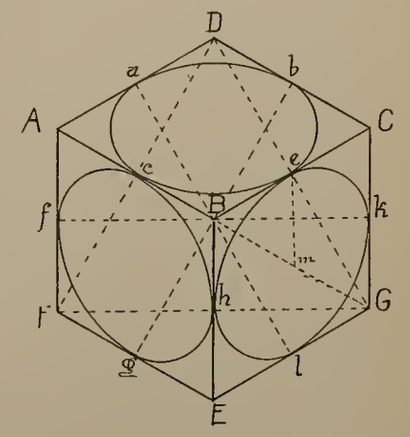


FIG. 72.

DIAGRAMS ILLUSTRATING "DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE," BY C. E. ILLSLEY. CHAPTER III—ISOMETRIC DRAWING.

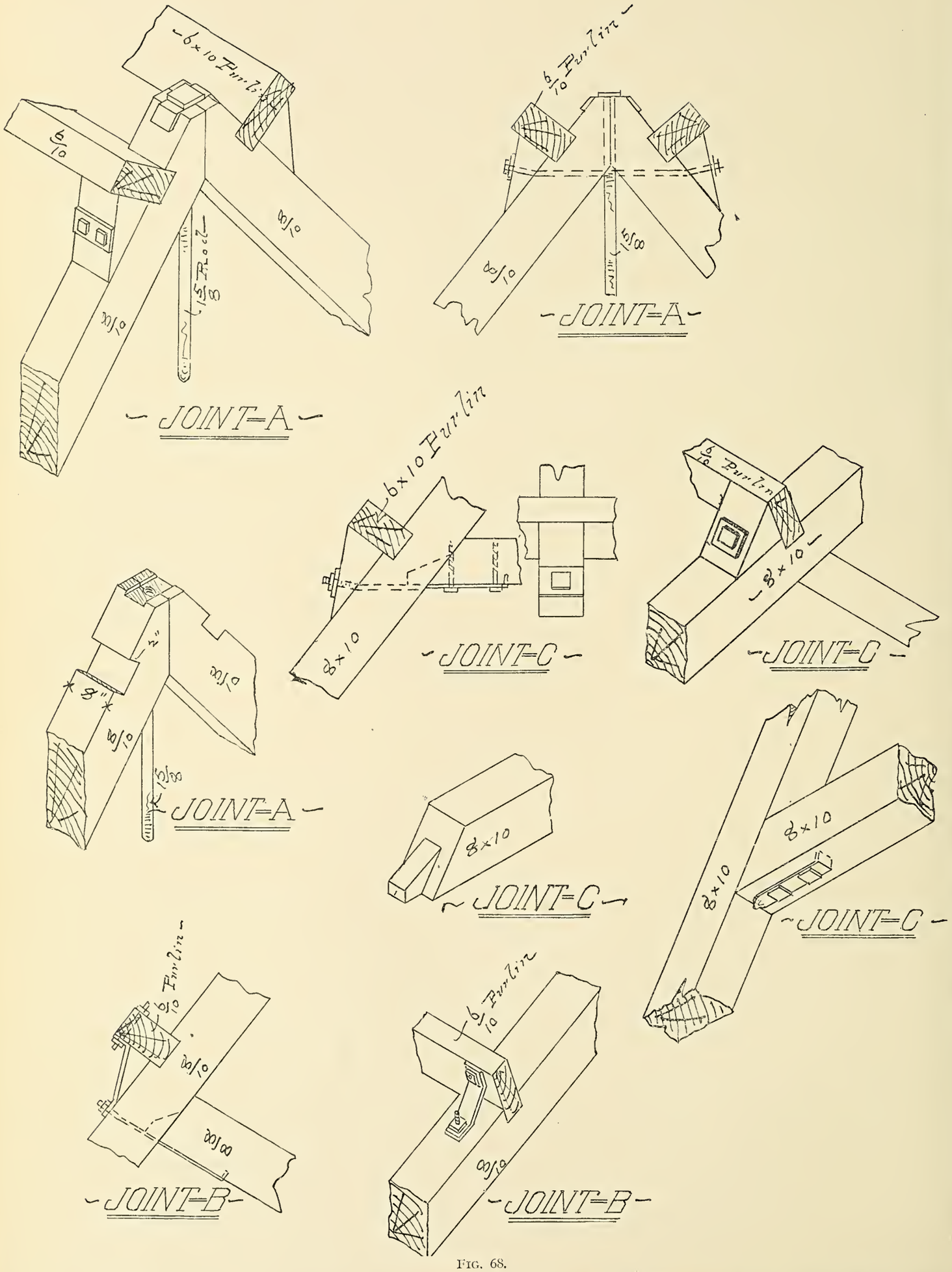


FIG. 68.

DIAGRAMS ILLUSTRATING "DIRECT METHODS IN ARCHITECTURAL F

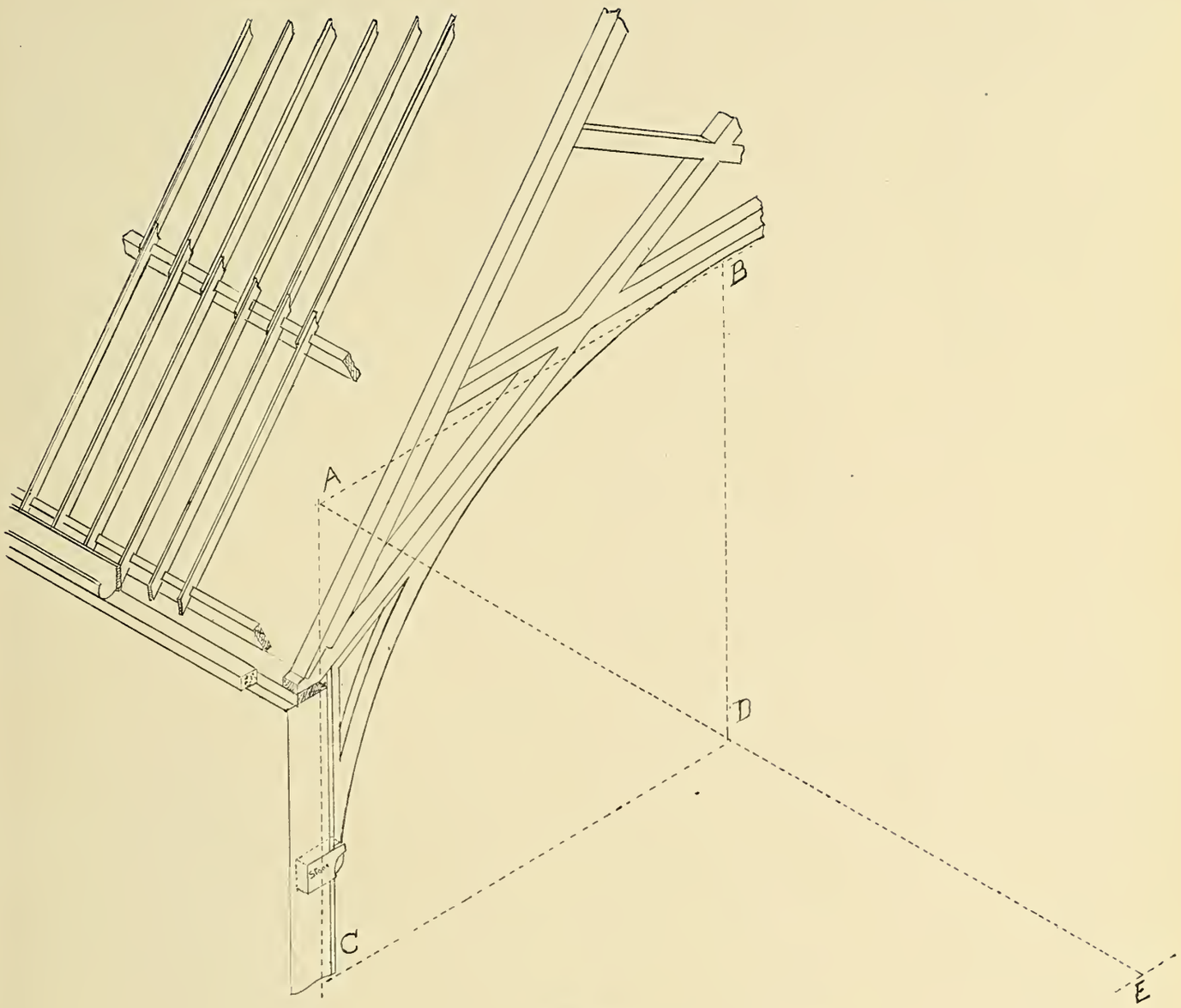


FIG. 73.

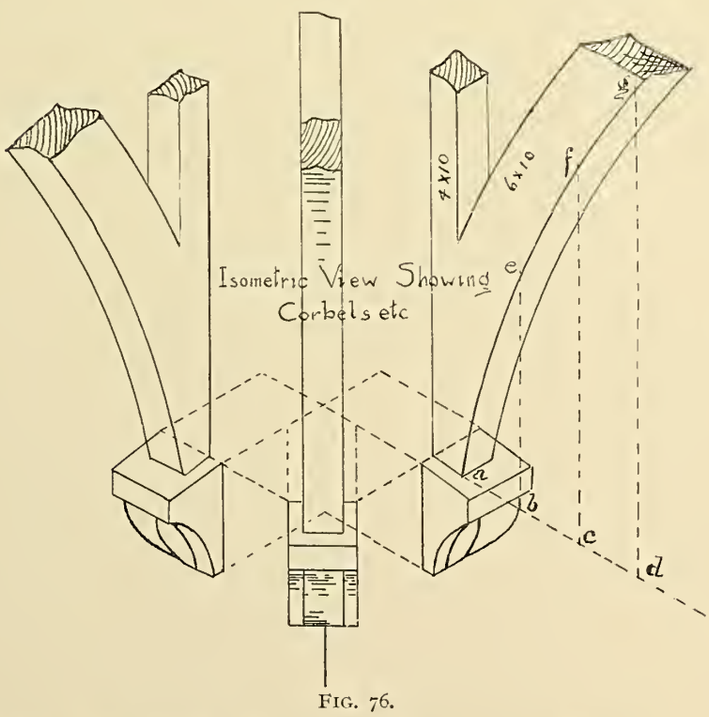


FIG. 76.

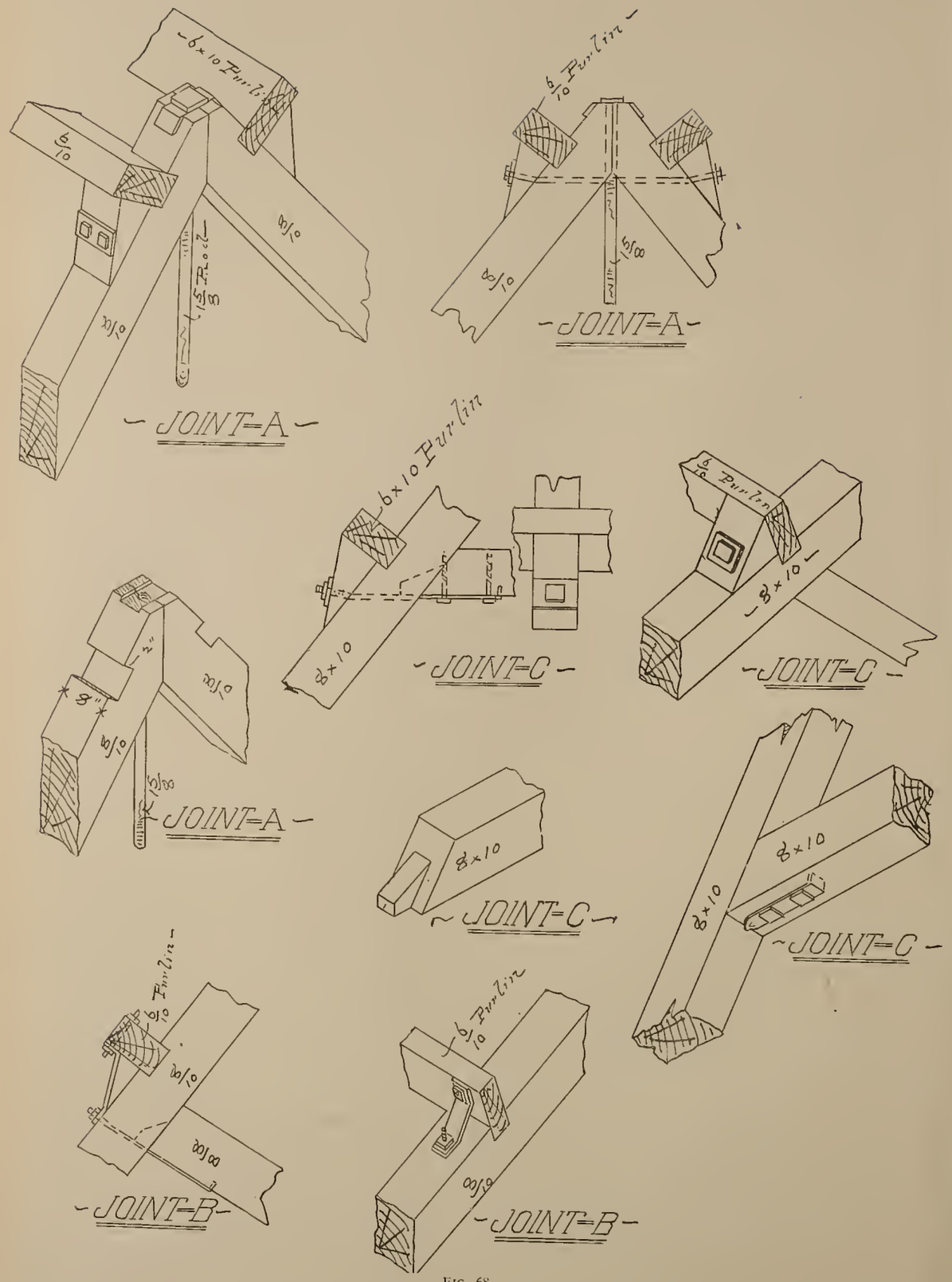


FIG. 68.

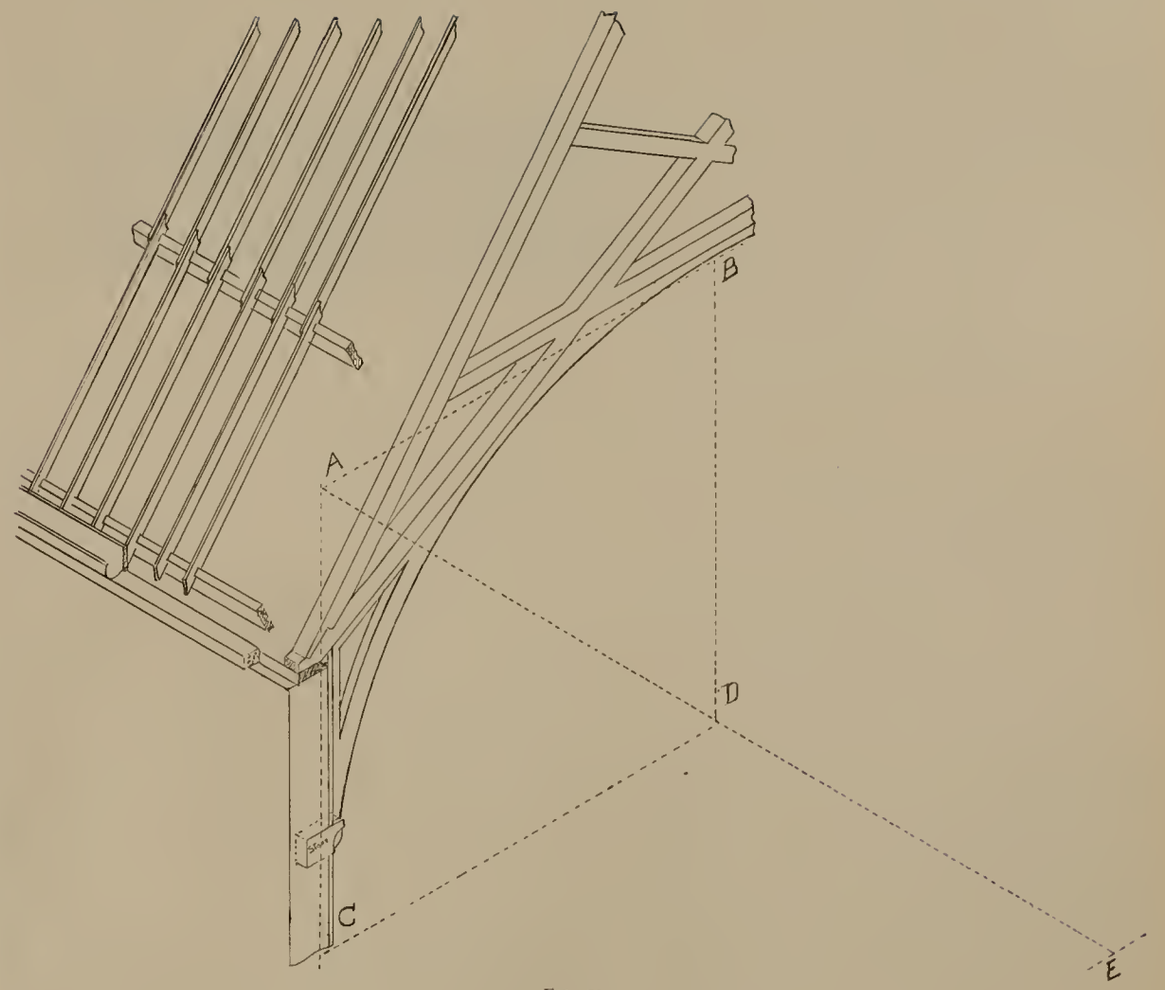


FIG. 73.

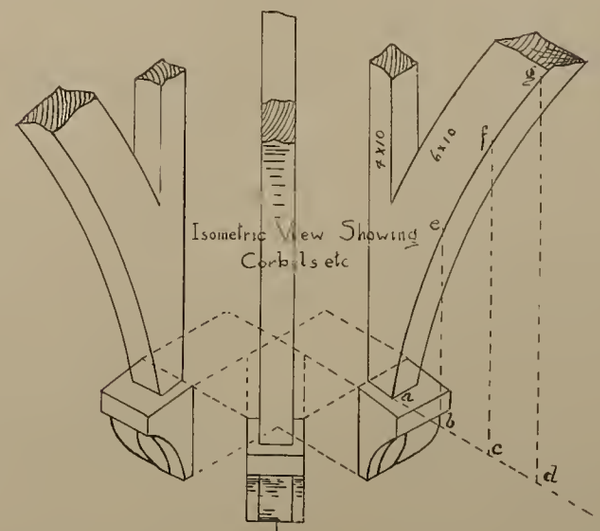


FIG. 76.

DIAGRAMS ILLUSTRATING "DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE," BY C. E. ILLSLEY. CHAPTER III—ISOMETRIC DRAWING.

THE INLAND ARCHITECT AND NEWS RECORD

Vol. XXI. MAY, 1893. No. 4



A Monthly Journal Devoted to

ARCHITECTURE,

CONSTRUCTION, DECORATION AND FURNISHING

IN THE WEST.

PUBLISHED BY THE INLAND PUBLISHING CO.,
19 Tribune Building, Chicago, Ill.

L. MULLER, Jr., Manager. ROBERT CRAIK McLEAN, Editor.
C. E. ILLSLEY, Associate Editor.

SPECIAL CONTRIBUTORS:

DANKMAR ADLER, D. H. BURNHAM, W. L. B. JENNEY,
HENRY VAN BRUNT, P. B. WIGHT, IRVING K. POND,
WM. PAUL GERHARD, LOUIS H. SULLIVAN, ALLEN B. POND.

TERMS: Regular number, $5 a year; Photogravure edition, $10 a year. Single copies, Regular number, 50c.; Photogravure edition (including 7 photogravures), $1. Advance payment required.

The columns and illustration pages of THE INLAND ARCHITECT are open to all alike, merit and availability only determining what shall be published. Contributions appropriate to its pages are always desired.

AMERICAN INSTITUTE OF ARCHITECTS.

OFFICERS FOR 1893:

PRESIDENT . . . . EDWARD H. KENDALL, New York, N. Y.
SECRETARY . . . . ALFRED STONE, Providence, R. I.
TREASURER. . . . SAMUEL A. TREAT, Chicago, Ill.

VICE-PRESIDENTS:

FIRST VICE-PRESIDENT . . DANIEL H. BURNHAM, Chicago, Ill.
SECOND VICE-PRESIDENT . HENRY VAN BRUNT, Kansas City, Mo.

BOARD OF DIRECTORS:

For three years.

Theophilus P. Chandler, Jr., Phila., Pa. Joseph F. Baumann, Knoxville, Tenn.
George W. Rapp, Cincinnati, Ohio. P. P. Furber, St. Louis, Mo.
William G. Preston, Boston, Mass. R. W. Gibson, New York, N. Y.
*W. W. Clay, Chicago, Ill. C. H. Johnson, St. Paul, Minn.

For two years.

*Richard M. Hunt, New York, N. Y. C. F. McKim, New York, N. Y.
E. M. Wheelwright, Boston, Mass. William Worth Carlin, Buffalo, N. Y.
*James W. McLaughlin, Cincinnati, O. S. S. Beman, Chicago, Ill.
William S. Eames, St. Louis, Mo. William C. Smith, Nashville, Tenn.

For one year.

W. M. Poindexter, Washington, D. C. *George B. Ferry, Milwaukee, Wis.
C. J. Clark, Louisville, Ky. George C. Mason, Jr., Philadelphia.
Levi T. Scofield, Cleveland, Ohio. E. F. Fassett, Portland, Me.
M. J. Dimmock, Richmond, Va. A. W. Longfellow, Boston, Mass.

*These, with President, Secretary and Treasurer ex-officio, form Executive Committee.

STANDING COMMITTEES FOR 1893:

Committee on Foreign Correspondence.—Richard M. Hunt, chairman, New York, N. Y.; William Le Baron Jenney, Chicago, Ill.; R. S. Peabody, Boston, Mass.; C. F. McKim, New York, N. Y.; Henry Van Brunt, Kansas City, Mo.

Committee on Education.—Henry Van Brunt, chairman, Kansas City, Mo.; Professor William R. Ware, New York, N. Y.; Professor N. Clifford Ricker, Champaign, Ill.; A. W. Longfellow, Boston, Mass.; Theophilus P. Chandler, Jr., Philadelphia, Pa.

Committee on Uniform Contract.—Samuel A. Treat, chairman, Chicago, Ill.; William Worth Carlin, Buffalo, N. Y.; Alfred Stone, Providence, R. I.

Committee upon Conservation of Public Buildings.—Richard Upjohn, chairman, New York, N. Y.; Presidents of the several Chapters.

Committee on Competition Code.—Charles E. Illsley, chairman, St. Louis, Mo.; J. W. Yost, Columbus, Ohio; J. G. Cutler, Rochester, N. Y.

Place of next Convention, Chicago, August, 1893.

R. M. Hunt Receives the Royal Gold Medal.

Mr. Richard M. Hunt, of New York, who has been awarded the Royal Gold Medal of Queen Victoria by the Royal Institute of British Architects, will be in London on June 19 to receive the medal from the hands of the president of the Royal Institute, of which Mr. Hunt has long been an honorary corresponding member. That this honor has been conferred upon an American architect is a compliment that should be appreciated by every citizen, as it is by every member of the profession, and the conferring of this honor upon Mr. Hunt coincides with the wish and judgment of every architect, as he is the representative exponent of American architectural ability and acquirement.

Twenty-seventh Convention A. I. A. Announced.

In fixing the date for the twenty-seventh annual convention of the American Institute of Architects for the week beginning July 31, so that the convention may be held in conjunction with that of the World's Congress of Architects, the executive committee of the American Institute has issued the following circular:

ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS, AND INTERNATIONAL CONGRESS OF ARCHITECTS.

CIRCULAR OF INFORMATION NO. 1.

The date fixed upon for the annual meeting of the American Institute of Architects is the week beginning July 31, 1893, in conjunction with the International Congress of Architects, which is to be held in the World's Congress Art Palace, situated on the shore of Lake Michigan, in the heart of the city of Chicago.

This International Congress of Architects is one of a series of international congresses to be held by invitation of the World's Congress Auxiliary, an organization authorized by the Directory of the World's Columbian Exposition and recognized by the government of the United States as the appropriate agency for the conduct of the several congresses, and they have designated as their committee Daniel H. Burnham, chairman; William Le Baron Jenney, vice-chairman; and Solon S. Beman. This committee have elected Robert Craik McLean as their secretary.

We are informed that the following list of subjects have been recommended for consideration:

Workingmen's houses;
Modern apartment houses;
Ancient apartment houses;
Laundries in houses, health effect;
Kitchens in houses, health effect;
Modern stables, large and small;
Responsibility of architects in constructional matters;
Responsibility of architects as to plans;
Responsibility of architects in decorative matters;
Sculpture and architecture;
Painting and architecture;
The client's right to service, as to drawings, ownership of same, specifications and details, as to supervision, etc.;
Mechanical engineering in architecture, and the Architect's responsibility therefor;
Modern steel construction;
Fireproofing of buildings to date, etc.;

and that persons specially fitted to treat upon them are to be invited to prepare papers to be read at the Congress.

It is also proposed by the American Institute of Architects to have a series of papers read by the master artists who have been engaged upon the work at Jackson Park, and at this time we are promised papers by Daniel H. Burnham, chief of construction; Frederick Law Olmsted, landscape architect; E. C. Shankland, chief of constructing engineers; and W. H. Holcomb, general manager, and expect favorable replies from several others.

A full attendance of the members of the Institute, as well as of the architects throughout the country, is expected, and this notice is issued at this time to enable all intending to attend the congress and the convention to arrange their plans with reference thereto. ALFRED STONE, Secretary A. I. A.

Similar action should be taken by every foreign society in regard to the appointment of representatives to the congress who will present papers upon the subject proposed or others which will be of interest to an international gathering of the profession. The new Art building in which the congress and the convention of the American Institute of Architects will be held is admirably

adapted for the purpose. Space upon the walls will be reserved for the hanging of drawings illustrating the different papers, a curtain and lime light with operator will be provided for those who wish to illustrate their papers by lantern slides, and every other facility for making the meetings interesting and the work done notable will be provided. It is requested by the secretary of the congress that those who have not received the official invitation will feel that their professional identification will make them welcome, and that those who have decided to present papers would at once notify the president of his local association of the fact so that the official programme may be prepared as early as possible. This programme will include a carefully prepared list of the architectural exhibits and illustrations displayed in the different sections of the Fair and their location, so that visitors may be able to inspect them all without inconvenience. The papers which will be read before the convention of the American Institute will be exceedingly interesting, as they are presented by the first among American architects and engineers, and all architects attending the congress, especially those from foreign countries, will doubtless be welcomed to the convention.

A "Business" Advertisement by the N. Y. "Herald."

It is surprising in the highest degree to find the following advertisement in the columns of the New York *Herald:*

TO ARCHITECTS AND BUILDERS.

Sealed proposals will be received until July 1, 1893, for the plans of construction (with estimated cost) of a steel office building of from twelve to twenty stories, on the site of the present *Herald* building, at Broadway and Ann street.

A prize of $500 will be paid for the plans selected as combining the greatest advantages, and $250 for the second best. G. G. Howland,
General Manager New York *Herald.*

The commissioners of Podunk county, Arkansas, would not be expected to know much more of architectural practice, perhaps, but to find that the business managers of a newspaper that has so long stood at the head of the list of American daily journals, demanding the keenest business judgment for its continued success, are so ignorant of professional procedure is simply beyond the comprehension of ordinary people. We are looking at the advertisement simply from its business standpoint, as it is signed by the "general manager," and is thus cut off from the brains of the paper, which is the editorial department. We do not attempt to point out the error, for the mind that has so little conception of what it means to design a "steel office building of from twelve to twenty stories," and with all that the problem implies, could not understand the plainest exposition of the absurdity of his proposition. We simply wish to apologize for the *Herald* as a newspaper, not as a business enterprise. In all great papers there is ostensibly a distinct line of demarkation drawn between the editorial and the business office, a rule never violated except where the editorial utterances are apt to injure the financial income, and it is unjust to charge ignorance of architectural affairs upon the editorial department when the business department makes the above egregious blunder. No, the editorial department of the *Herald* was not and probably will not be consulted in this business transaction, and probably will not be allowed to defend itself against the charge of dense ignorance in which an indiscriminate judgment would involve it. Of course, no architect worthy of the name will reply to the offer made by the general manager of the *Herald*, and if any builder be found who will attempt the erection of the proposed structure, it will be as precarious as the continued resting of the fortunes of the paper upon a business policy such as the advertisement in question would indicate.

The Art Section of the World's Congress.

In August, commencing with the thirty-first day of July, the art section of the Congress Auxiliary of the World's Columbian Exposition will hold its different congresses. The general divisions are six in number, comprising painters, sculptors, architects, engravers, photographers and decorative artists, in the order named, and it is understood that there will be added a seventh division on the organization of art, under the leadership of M. Barthelemy, who was an acting commissioner of fine arts from France to the Columbian Exposition. This latter section, according to the plan of M. Barthelemy, is intended to bring together those who without being professional artists are interested in art, such as art critics, curators of museums, directors of schools, etc., with the view to generally discuss the teaching and general government of art. As in all of the general divisions, but little attempt will be made to secure special representatives at the congress. The announcement of such important gatherings is deemed of sufficient interest to those who stand first in painting, sculpture, architecture, etc., to draw them together at a time when the world will naturally meet to compare notes and take account of the progress of the race in the line of their especial endeavor. That special programmes will be prepared and the utterances of the brightest minds and closest students in the respective professions will be sought for and brought together is of course natural, and, speaking for the architectural section, we are sure there will be no disappointment, for each great society will be represented by some of its most distinguished members. Additions are constantly being made to the programme in the way of papers upon special subjects, and notification of the appointment of delegates from foreign societies and representatives o f governments are being received, indicating the interest taken in architectural and art progression throughout the world.

Hand Cameras at the World's Fair.

Novices in photography will be common at the World's Fair, and they will, unless warned, be misled by the commonly seen advertisement recommending a popular small camera and the use of films. "No bulky glass plates and troublesome holders" and that most misleading and injurious statement about "pressing the button." The choice is plainly this: Go to the Fair, and with a film holder "press the button" 200 times with ease and dispatch, and afterward find, perhaps, that not a single good exposure has been made; or use the "bulky" glass plates, knowing that each is apt to be good, and by developing them each night be able, if they are not good, to retake them next day. We recommend the use of glass plates entirely and the immediate development of at least some of the negatives, in preference to the use of a film with a perfect ignorance regarding its action and a large percentage of chances that there is something wrong which is not discovered until too late. While upon the subject it might be well to state that only cameras with 4 by 5 inches exposure or under will be allowed in the Fair grounds, and these will be taxed $2 a day unless otherwise ordered by the Bureau of Administration.

DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE.

BY CHARLES E. ILLSLEY, A.M., C.E., ARCHITECT.

CHAPTER V.—OBLIQUE OR CABINET PROJECTIONS.*

THERE is a class of projections which, bearing a general resemblance to isometric views, are yet essentially different in principle and are of superior utility for certain requirements. Their origin is French. They are variously styled "military," "cavalier" or "cabinet" projections, and they belong to the general class of oblique projections, while isometric drawings are orthographic (see Section 26). Figs. 77, 78 and 79 are cabinet projections of the cube shown isometrically in Fig. 80.

58. Comparing them, we note that every line in the cabinet projections is of the same length, and that two faces, namely, A B E F and C D H G, appear in their true size and shape. It will be shown farther that every line which may be drawn in these faces, or in any plane parallel with them, will appear in its true

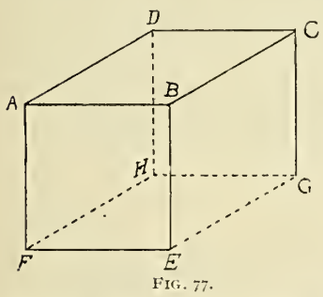


FIG. 77.

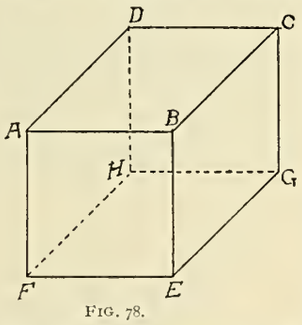


FIG. 78.

size and shape. In the cabinet projections of the cube, the distant corner H in Figs. 77 and 78 and D in Fig. 79 is distinctly shown; in the isometric cube the corner H is overlaid by the front corner B.

All the figures show three faces of the cube with considerable perspective effect. In the isometric cube, these faces are shown equally; in the others the inequality is more noticeable between the faces which are shown accurately and those which are distorted. Figs. 81 and 82, taken from the advertising pages of THE INLAND ARCHITECT, are additional illustrations of cabinet projections.

59. In Section 23, Fig. 26, the observer is represented as standing opposite the center of the plane of the picture, and when he removes to an infinite distance the visual rays become perpendicular to this plane (Section 26). Should the observer occupy any

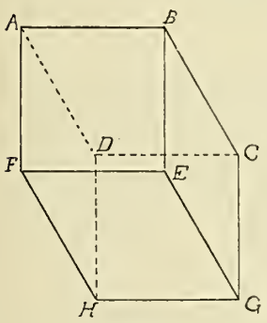


FIG. 79.

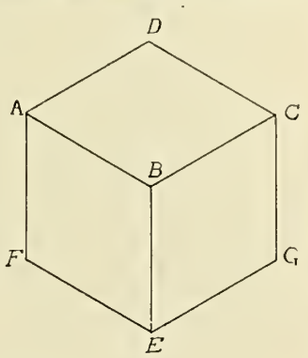
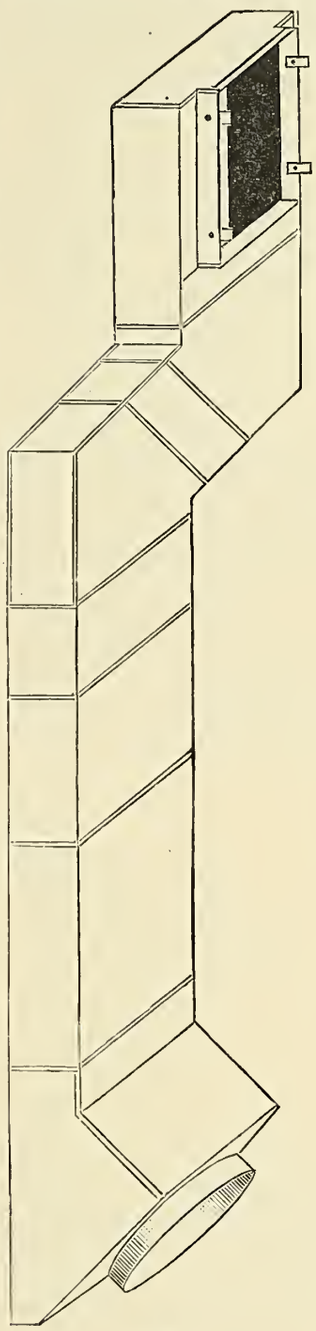


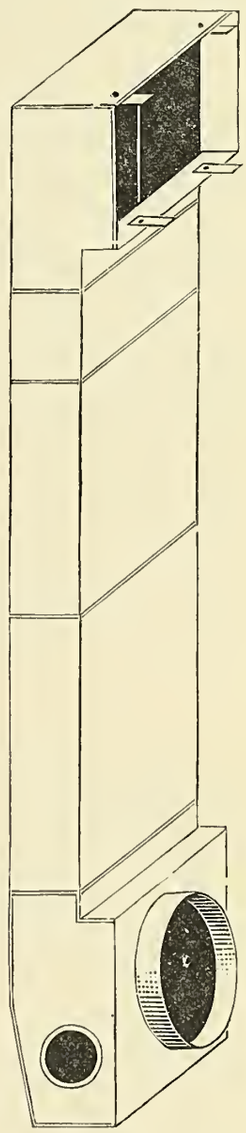
FIG. 80.

other position by removing to one side or the other of the line shown, and then withdraw to an infinite distance, the visual rays would become parallel as before, but they would be oblique to the picture plane. The perspective so obtained would then become an *oblique projection* of the object seen. When these oblique rays make an angle of forty-five degrees with the plane of the picture, the oblique projection becomes a *cabinet projection*.

60. In Fig. 83 the line A C makes an angle of forty-five degrees with the vertical A B and with the horizontal B C. The point C may therefore be considered the cabinet projection on the plane D E F G of the point A, and the horizontal line B C will be the cabinet projection of the vertical line A B. It is evident that B C will always equal A B, whence the cabinet projection of a vertical line on a horizontal plane is of the same length as the line itself.

The projecting ray A C may be conceived to revolve around the vertical A B as an axis into an infinite number of positions, always maintaining its angle of forty-five degrees, and yielding an


FIG. 81.


FIG. 82.

infinite number of projections of A B. This is illustrated in Fig. 84, which is an isometric drawing of the cone of rays so formed. Any radius of the base of the cone may be taken as the cabinet projection of its axis, A B.

In Fig. 85 A C represents any line parallel to the plane of projection; A D and C E are the projecting rays at forty-five degrees

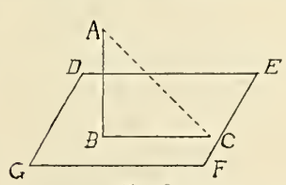


FIG. 83.

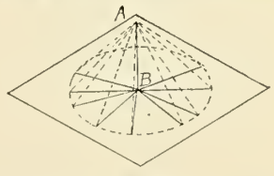


FIG. 84.

from its extremities; D E, the cabinet projection of A C, is parallel and equal to A C.

61. Hence results the following rule for drawing the cube in cabinet projection: Draw one face of the cube as A B E F in Figs. 77, 78, 79 of its true size and shape. Draw one edge as A D

* For the fundamental principles of this chapter, the author takes pleasure in acknowledging his debt to the excellent text-book "Elementary Projection Drawing," by Prof. S. Edward Warren, C.E., who was his instructor and personal friend at the Rensselaer Polytechnic Institute, Troy, N. Y.

in any direction whatever. Draw B C and E G parallel with A D. Lay off on A D the depth of the cube, i. e., make A D = A B. Through D draw D C parallel with A B. Draw C G parallel with A F.

In Fig. 77 the line A D is at thirty degrees with A B; in Fig. 78 the same angle is forty-five degrees, and in Fig. 79 it is sixty degrees. The application of this rule to other regular objects will be easy. Take, for example, the hexagonal prism Fig. 86. One face, A B C D E F, is drawn in true size and shape. From any

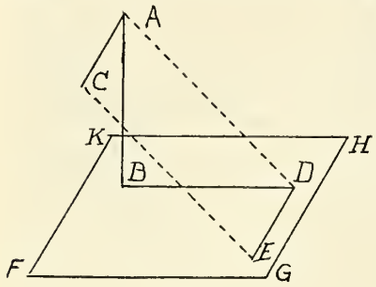


Fig. 85.

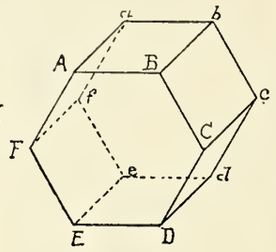


Fig. 86.

corner A draw A a in any direction. (In Fig. 86 A a is drawn at forty-five degrees with A B.) Lay off A a equal in length to the depth of the prism. Through a draw the hexagon a b c d e f parallel with the front hexagon, and join B b, C c, etc.

Or, having drawn A a in the direction desired, draw B b, C c, D d, etc., parallel with A a, and lay off on each the length A a; then join the points so found.

Fig. 87 shows how recesses and projections are drawn substantially in the same manner as in Fig. 42. Oblique lines, as A B in Fig. 87, are located by the distance out, B C and the height A C, the same as in isometric drawing.

62. Fig. 88 is a framing detail in cabinet projection. The front part is simply an ordinary elevation, and the same dimensions

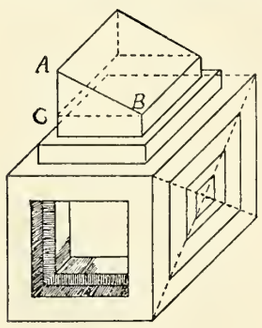


Fig. 87.

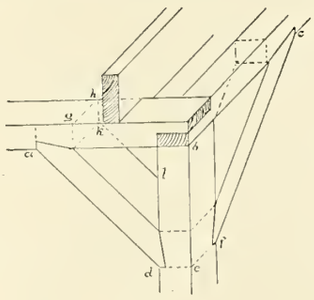


Fig. 88.

are laid off on the receding lines, which are drawn at forty-five degrees. Thus, b c, the distance out of the brace on the receding side, is equal to a b. The foot of the brace at d is transferred to the receding edge of the post by drawing d e horizontally and e f at forty-five degrees. The distant edge of the slanting brace is located by drawing g h i k, the section of the horizontal beam or plate, to obtain the point k, whence k l is parallel with a d. The same construction is shown on the receding side.

63. Fig. 89 is a detail of a cast-iron stool with square base and top, to support a column. The method of construction is shown

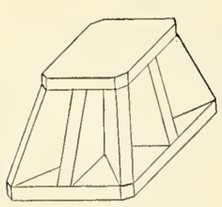


Fig. 89.

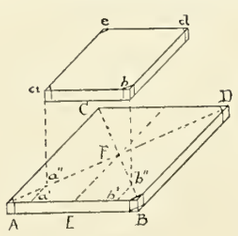


Fig. 90.

in Fig. 90. Draw A B C D to scale for the base with square corners. Draw diagonals A D, B C, and through their intersection F draw E F parallel with A C. Lay off each way from E, which is the center of A B, one half the width a b of the top of the stool. Through the points thus located draw a′ a″, and b′ b″ parallel with A C, to meet the diagonals A D, B C. Erect verticals a″ a and b″ b, and lay off a″ a equal to the height of the stool above its base. This gives the point a, from which draw a b c d, the square of the upper base.

Find the beveled corners by laying off on A B, and on a b the point where the bevel begins, and drawing lines parallel with the diagonals A D or B C.

In all other respects the construction will be self-evident.

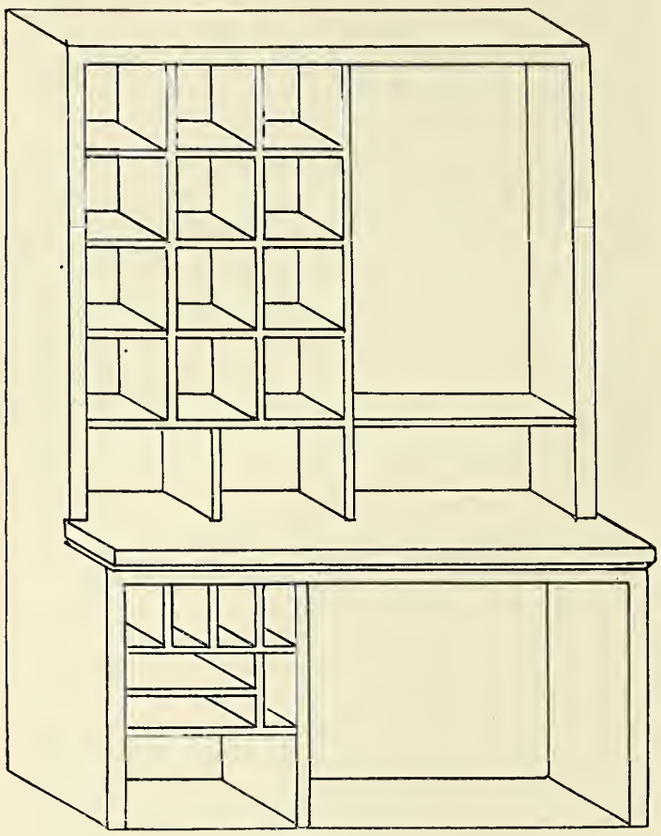


Fig. 91.

Fig. 91 illustrates the great serviceability and the picturesque effect of cabinet projection when applied to pantry fittings and other cabinet work.

64. The circle in cabinet projection is not quite as readily and satisfactorily drawn as in isometric work. The front face, Fig. 92, presents no difficulties, since the square with its inscribed circle is in its true size and shape.

On A D G F, the receding side of the cube, a number of points may be located thus: Four points of tangency are at a, b, c, d, the middles of their respective sides. Draw the front diagonal B F, and the receding diagonals F D, A G, and E G. The front circle cuts B F in e. Find the corresponding point f on D F by drawing e f parallel with the diagonal E G. To find the three corresponding points on the other diagonals draw f h parallel with F G, and draw f g and h i parallel with A F. Having now four tangent points and four points on diagonals, the rest of the curve may be drawn in free hand.

Any number of intermediate points may be located accurately by the abscissæ and ordinates (Section 56), as shown by dotted lines at A. The distances spaced off on A B, are repeated on A D and verticals drawn through each point. From the foot of the first vertical in the face A B E F draw a horizontal line to A F, thence a line parallel with A D to meet the corresponding vertical in the face A D G F.

65. This method is shown to a larger scale in Fig. 93, where a quarter circle in the front face of the cabinet projection of a cube is transferred to the adjacent receding face. Lay off on Ag and Ag′ the equal distances Ab, bd, de, ef, fg, and Ab′ b′ d′, d′e′, e′f′, f′g′. Also mark points a, c, a′, c′, at the middles of the first two divisions. Through all these points draw verticals, as shown by dotted lines.

The quarter circle Bg, being in the front face of our cabinet projection of a cube, appears in real size and shape (see Sec. 64). From the points 1, 2, 3, 4, 5, 6, where the verticals through a, b, c, d, e, f, meet this arc, draw horizontals meeting AB in h, i, k, l, m, n. Thence draw lines h1′, i2′, k3′, etc., parallel with Ag′ to meet the verticals through a′, b′, c′, d′, e′, f′. The intersection

1′ of the first line h1′ with the first vertical a′ 1′ on the receding face of our cube is the cabinet projection on the receding face of the point 1 on the circle Bg in the front face. Similarly the line i2′ on the receding face cuts the second vertical in 2′, which is the projection on that face of the point 2 on the front face. The other points are found in like manner. It is obvious that the remaining three-quarters of the circle may be drawn by repeating these operations.

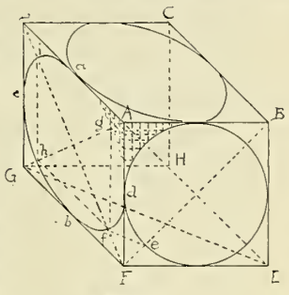


FIG. 92.

66. Approximate curves composed of circular arcs may be drawn as follows (see Fig. 94). Since the curve must be tangent to the sides at their middles, a b c d e f g, the radii must be perpendicular to these sides at these points. Therefore draw a k at right angles to C D, and c k at right angles to B C. The point k where these lines meet is the center for the arc a c. At the middle of A B erect the perpendicular d l, making the length d l = a k. The point l is the center for the arc b d. The points where the radii l b, l d,

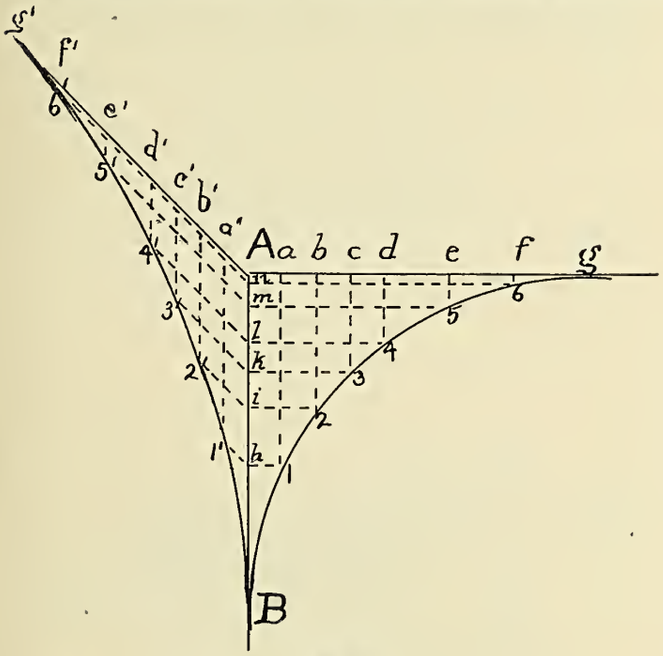


FIG. 93.

cross the diagonal B D are centers for the remaining arcs which complete the curve.

For the circle in the face A D G F continue the radius l b to meet the horizontal f m through the middle of the edge A F. The point m is the center for the curve b f. The center for the curve e g is at n, where the horizontal e n from the middle of D G meets g n which is perpendicular to F G at its middle.

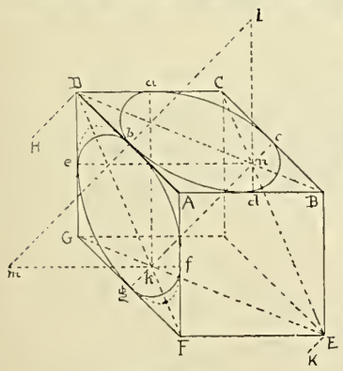


FIG. 94.

The error in this compound circular curve is chiefly along its major axis D F. The true curve, as shown by dotted lines copied from Fig. 92, is slightly the longer.

67. It may be noted that the centers l and m are in the same straight line perpendicular to A D at its middle, also that the center k falls upon the diagonals D F and E G at their intersection, also that the center n falls on the intersection of diagonals B D and C E. Hence these centers may be found directly by drawing the diagonals named.

The reason may be found in the fact that the sides E B, B C, etc., being equal and the angle A B C being forty-five degrees, while A B E is ninety degrees, the three sides E B, B C, C D form a part of a regular octagon, which, if continued, would follow the directions indicated by E K and D H. In a regular octagon all lines which bisect the angles meet in its center, as also do lines perpendicular to the sides at their middles. Now the diagonals above noted make angles of sixty-seven and one-half degrees with their adjacent sides, which is exactly half of the angle of an octagon at each corner, and the radii drawn are perpendicular to their respective sides and bisect them.

(To be continued.)

HEATING AND VENTILATION OF RESIDENCES.

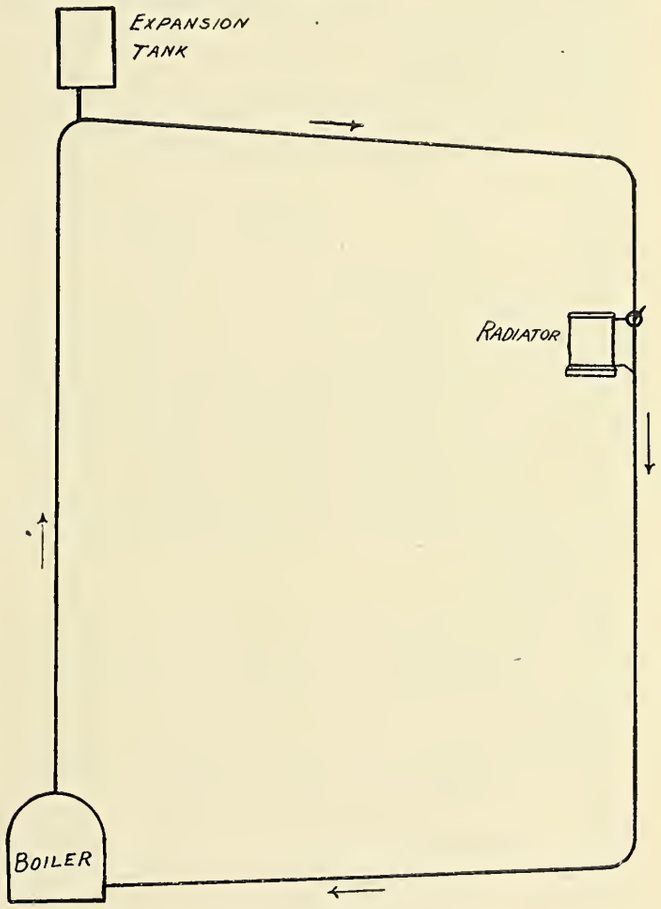
BY JAMES R. WILLETT.

Copyrighted by the author, 1893.

HOT-WATER HEATING.

A HOT-WATER heating apparatus may be likened to a circle, or rather, to two vertical columns of pipe, which columns are connected both at top and bottom so as to form a continuous conduit. If these columns are filled with water and one of them is heated, especially at or near its lowest point, the water in the heated column will ascend, while that in the cold column will descend. The heated water is the lightest. The motive power being the difference in the weights of these columns. The difference in the weights of water at different temperatures below the boiling point is quite small, and therefore it is desirable for the apparatus to be adjusted so the water in passing through it shall have as little friction as is practicable.

The boiler may be said to be placed at the lowest point of the heated column, and the heated column is the supply or feed-pipe to the radiators, while the colder column is the return from the radiators to the boiler. The greater the difference between the temperatures of these columns the greater the motive force, and therefore the more rapid the circulation.



The foregoing figure illustrates the circulation of water in hot-water heating apparatus.

If you will examine the accompanying drawings of hot-water heating apparatus you will perceive that, however complicated they may at first appear, yet they are all resolvable into the foregoing simple figure.

The radiators may be placed at any points of the circuit. The higher they are above the boiler the more rapid will be the circulation of the water.

Separate vertical sections or loops forming a hot-water radiator should be connected at both top and bottom so as to allow water and air to pass. The larger these connections the better.

Globe valves should not be used on hot-water pipes as they obstruct the flow of water. Angle valves, straight-way valves and deflecting valves may be used.

Elbows, tees and other fittings should be long-sweep water fittings. Ordinary (short) fittings, such as will do for steam, should not be used.

All waste pipes should discharge in open view, otherwise they may be leaking water constantly without it being known, and thus wasting fuel and perhaps leading to a dangerous condition of the apparatus.

When water is heated it expands, and there should be an expansion tank provided to receive the amount of such expansion, otherwise, when the water contracts by cooling, it might occur that the water column would be broken, that is, would not connect at the top. The expansion tank contains, so to speak, surplus water, so that no matter whether it be cold or hot there can be no breaking of the water column. It should be the highest point of the whole apparatus, and should connect with the highest point of the circulation.

The necessary dimensions of an expansion tank to contain the increase in volume of the water in the apparatus, arising from the heating thereof, can be ascertained by adding the volume in the boiler, the volume in the pipes, etc., and the volume in the radiators.

Divide the sum of these volumes by 20, and the quotient will give the necessary volume that should be in the expansion tank.

The volume of pipes can be taken from table given by Baldwin, Thurston and others.

It is not, however, necessary to find the separate volumes of boiler, pipes, distributers and radiators. It will be sufficiently accurate for all practical purposes to divide the total radiation in square feet by 300 and the quotient will be the requisite volume in cubic feet of the expansion tank.

Or, if the total square feet of radiation is multiplied by 5.76, the product will be the requisite volume of the expansion tank in cubic inches.

The connections from bottom of expansion tank to apparatus differ in the different methods of heating and will be described hereafter.

The supply pipe to expansion tank should be one inch, and should pass through the boiler room where it should connect with a hand-lift and force pump, usually about a two-inch brass barrel and seven-inch stroke, which must draw its supply from water works, cistern or other source. It should then pass upward, and should enter near the top of the expansion tank.

There is another one-inch pipe to be taken from the expansion tank, an overflow pipe. This pipe should pass out from expansion tank at the same level as the supply pipe and run to boiler room, there to discharge the water into a trap, but always so that the discharge of water can be seen. This pipe also acts as an air pipe. By the above arrangement it can be told if the apparatus is full of water; for by pumping a few moments, if the apparatus is full, the water will overflow and its discharge can be seen. If it does not thus overflow, then it needs pumping until it does.

Hot-water boilers need not differ from steam boilers, except that they should not have "steam space," that is, there should not be any large interior spaces in them. The smaller spaces should not be less than two inches in the narrowest way, and need not be much more, except at pipe entrances or exits, where it should be enlarged to accommodate all the water from or to the smaller spaces. A boiler of very large cubical contents is not desirable for hot-water heating, but it is desirable not to have the water passages narrow and rough and with square elbows. The less opportunities for friction there are the better.

If your boiler is not a "sectional" one (that is, one that can be taken into the building in small parts and there put together) see that you provide some way of getting it into the building and into its place.

It is desirable to put an altitude gauge on a hot-water boiler, but it is not indispensable.

It is also desirable to put a pop safety valve on a hot-water boiler, though if the "open" method is used it is not indispensable. If the closed method is to be used, or if the means of changing an open method to the closed method are provided, then a pop safety valve must be put on the boiler — a one-inch valve is usually sufficient,

One great advantage the hot-water system has is that by keeping a small, low fire the heat is graduated and the amount made suitable to mild weather. In fact, hot-water heating apparatus, to be perfectly run, should be governed by the firing at the boiler, keeping a low fire in mild weather and a strong, lively fire in cold weather. If this were done it would not be necessary to have any valves on the radiators; but it never is and never will be done, at least in any thorough manner.

OVERHEAD METHOD.

The overhead method of hot-water heating, sometimes called the "Mills" system, from the name of the writer who described it, is to be preferred. In this overhead method the feed-pipe is run from top of boiler directly upward as nearly as is practicable to the attic. There branches are taken from this main feed-pipe to points directly over the radiators in the stories below; thence, these branches descend, communicating with the radiators as they pass by means of two connections to each radiator: one from the branch pipe to the top of the radiator, and another from the bottom of the radiator to the same branch pipe. The upper, or feed connection should have a valve upon it. The lower, or return connection should not have a valve.

By this arrangement, when the radiator valve is open the water passes out from the branch pipe to the top of the radiator, thence, passes through the radiator, and passes out through the lower, or return connection to the branch pipe again; thence, it passes downward and goes through any other radiator that may be on a lower story. In this manner it may pass through several radiators in different stories. Finally it passes through into the basement and returns to the boiler.

Since the greater the difference of temperature between the hot water column and the colder column, the greater the motive force is; therefore, the less heat the ascending column gives off, and the more the descending column, the more rapid is the circulation. It is therefore best to clothe the heated column with pipe covering and leave the colder column uncovered.

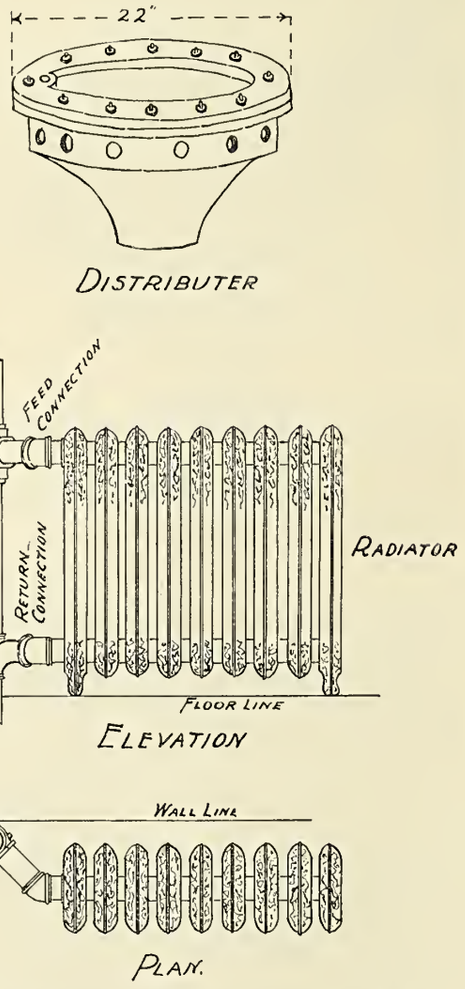
Now the water, after it leaves a radiator in an upper story, is of course at a less temperature than it was before it entered that radiator; therefore, the water enters the radiator in a lower story at a less temperature than it entered the upper radiator; usually, however, the difference does not exceed ten degrees. It is therefore necessary to increase the surface of the lower radiators to make up for the difference in the temperature of the water.

In the overhead method of hot-water heating the whole apparatus is graded and arranged so that while the apparatus is being filled with water all the air therein can, and naturally does, ascend to the expansion tank and escapes therefrom through the overflow pipe. Consequently air cocks are not needed on the radiators.

The lowest point of expansion tank should be connected with highest point of circulation, that is with the highest point of main feed in attic, or with top of distributer, by a one-inch pipe.

After reaching the attic the main feed-pipe may run horizontally around attic to supply the branches, and similarly a return main may run around basement, as shown in Plates I, II and III.

It has, however, been found cheaper, more convenient and as efficient to substitute for these horizontal mains a casting called a "distributer," shown in accompanying sketch and in Plates IV, V and VI.



THE BRANCH PIPE MUST BE KEPT CLOSE TO WALL AND THE CONNECTIONS MADE AT RADIATOR BY ELBOWS AS SHOWN.

The main feed enters the bottom of this "distributer" and the branches pass out from the upper portions thereof, as shown in the drawing. The top of this distributer is connected with the bottom of the expansion tank so that air can escape into the tank, and, through the overflow, from the tank.

The advantages of the overhead method are:

As the water which passes downward through an upper story radiator also may pass downward through a radiator in lower story, therefore both of the radiators are working together and one does not rob, but assists, the other.

The main feed to attic is a comparatively large pipe, but it can be run up in an out-of-the-way place, and be readily clothed, so as to retain the heat.

The descending pipes to radiators are relatively small and can and should be left uncovered. They pass through the rooms.

There need be no air cocks on the radiators, which cocks are apt to leak.

The valve that is upon the feed connection at top of radiator may be an ordinary gate valve, but it is better to use what may be termed a deflecting valve. This is a valve which goes on a branch at the junction of the branch with the feed at the top of the radiator and is a flap valve. By turning the flap in one direction the water, if it moves at all, must pass into and through the radiator, whereas by turning the flap in the other direction the water must pass straight down the branch pipe without entering the radiator.

In order to retain the heat in the main feed-pipe and other feeding portions of the apparatus, the main feed from top of boiler should be entirely covered with pipe covering. The whole of the portion of the apparatus that is in the attic should also be covered. If the boiler is not bricked in it should also be covered.

The branches, after leaving the attic, should not be covered. It is much the best that they should not be put in the walls, but, if the owner insists upon it, it may be done.

The more such pipes are exposed the more heat they give off, and, therefore, the greater will be the difference between their temperature and that of the feed-pipe with a resulting increase of the efficiency of both; besides, any pipes at times are liable to leak, and if they are inclosed in the wall they are difficult to get at; also, the pipe itself acts as a radiator, and if you need any heat at all you need at least as much heat as the pipe will throw off.

The foregoing is a description of an "open" method of hot-water heating. That is, a method in which the water can expand, overflow and escape, therefore, no pressure can come upon the apparatus except the weight of the water.

This can be readily changed to a closed system by putting valves on the water supply and on the overflow pipes. The shutting of these valves would make a "closed" method. Leaving them open makes an "open" method.

In a closed method a pop safety valve should be put on the boiler. It is also well to make the expansion tank air tight and twice the volume of that needed for the open method, the supply and overflow pipes to enter the expansion tank at one-half of its height. The upper half of the expansion tank will then act as an air cushion.

It is intended, however, to use the "open" method exclusively, which means that the valves on water supply and overflow pipes will be left open. These valves are intended to give facility for testing the apparatus and are not for constant use. It is best before leaving the apparatus to screw the packing nuts up tight and to wire the handles of these valves so that they cannot be turned.

To ascertain the direct radiator surface take the formula heretofore given:

$$Q = R\ F\ J$$ = requisite square feet of direct radiator surface in a room.

The value of "R" can be calculated by the rule already given.

"F" is to be taken from Table III. This value varies with the different stories. Thus in a two-story house and for the first-story rooms "F" is to be taken as 1.2, while for the second-story rooms it is to be taken as 0.8. In a three-story house, for the first-story rooms "F" = 1.25, for the second-story room F = 1, and for the third-story rooms F = 0.75.

The value of the factor "J" will depend upon the exposure of the room. Rooms which are exposed to prevailing cold winds (north and west sides) will usually require more than those on south and east sides, depending on surroundings. If the house is in a sheltered position little increase need be made. For north and west sides "J" is usually taken as 1.4, and on south and east sides, J = 1.

For bathrooms J = 2.
For kitchens J = 0.5 to 0.7.

Direct radiators in entrance halls or near exterior doors should be largely increased, here J may be taken as 2, or instead twenty to fifty feet may be added to the radiator. It is a good custom to increase the direct radiation wherever there are entrance doors or other opportunities for the admission of cold air.

The quantity of air necessary to ventilate the house can be determined by the rules already given under the heading of "Ventilation." The air should be introduced through the stair halls and thence to the different rooms.

The air required for the ventilation of the building must be heated by indirect radiators, preferably by the direct-indirect radiators heretofore spoken of. As the hot water never gives off a high temperature, it is necessary that the quantity of surface in the indirect radiator should bear a large proportion to the air admitted. This is true whether the radiator is an ordinary, indirect radiator hung to the basement ceiling or the direct-indirect heretofore spoken of.

It is well to make the indirect radiation as much as one-fourth of the direct radiation in the building—indeed it cannot be too much.

HEATING QUANTITIES—HOT-WATER, OVERHEAD METHOD.

BUILDING: Frank Hamilton's Residence. LOCATION: Momence, Illinois. DATE: October, 1892.

FIRST STORY.	Room No. 22, Stair Hall.	Room No. 23, Toilet.	Room No. 24, Parlor.	Room No. 25, Sitting.	Room No. 26, Dining.	Room No. 28, Butler's Pantry.	Room No. 32, Kitchen.	Total.
Volume Cu. Ft. Actual	2,234	160	2,000	2,300	2,100	750	1,570	.....
Volume Cu. Ft. Effective	6	0	5	6	5	2	4	.....
Ext. Wall Sq. Ft. Actual	138	36	250	230	200	38	352	.....
Ext. Wall Sq. Ft. Effective	14	4	25	23	20	4	35	.....
Ext. Doors and Windows, Sq. Ft. Actual	28	4	48	62	47	7	86	.....
Ext. Doors and Windows, Sq. Ft. Effective	14	2	24	31	24	4	43	.....
"R" =	Bro't from 2d story 34 + 49 = 83	6	54	60	49	10	82	.....
"F" =	1.2	1.2	1.2	1.2	1.2	1.2	1.2	.....
RF =	99.6	7.2	64.8	72.0	58.8	12.0	98.4	.....
J =	.....	.....	.....	.....	1.2	1.2	0.5	.....
Q = RFJ =	.....	.....	.....	.....	70.56	14.4	49.20	
Direct Radiation Adopted, sq. ft.	100	9	70	70	70	14	48	381

SECOND STORY.	Room No. 40, Chamber.	Room No. 41, Stair Hall.	Room No. 42, Chamber.	Room No. 45, Chamber.	Room No. 47, Chamber.	Room No. 50, Bath.	Room No. 54, Servant's Chamber.	Total.
Volume Cu. Ft. Actual	506	2,300	1,850	1,870	1,770	480	1,400	.....
Volume Cu. Ft. Effective	1	6	5	5	4	1	4	.....
Ext. Wall Sq. Ft. Actual	135	160	250	198	188	134	330	.....
Ext. Wall Sq. Ft. Effective	14	16	25	20	19	13	33	.....
Ext. Doors and Windows Sq. Ft. Actual	10	54	31	35	30	10	16	.....
Ext. Doors and Windows Sq. Ft. Effective	5	27	16	18	15	5	8	.....
R =	20	49	46	43	38	19	45	.....
F =	0.8	Transferred to 1st story.	0.8	0.8	0.8	0.8	0.8	.....
RF =	16.0		36.8	34.4	30.4	15.2	36.0	.....
J =	.....	.....	.....	.....	1.2	2.	1.2	.....
Q = RFJ =	.....	.....	.....	.....	36.48	30.4	43.20	.....
Direct Radiation Adopted, sq. ft.	16	—	37	35	40	30	42	200

DIRECT RADIATION ADOPTED.

First story 381
Second story 200

Total 581
Indirect radiation 200

Total radiation ..... 781 square feet.

By table of grate areas, Table II, 800 square feet radiation gives 630 square inches grate, adopted.

Area of brick smoke flue, $\frac{630}{5}$ = 126 square inches.

Adopt 12 by 16 inch smoke flue = 192 square inches.

FIVE BEDROOMS.

Area of fresh-air duct, square inches, = 40 by 5 = 200 square inches.
Adopt 18-inch diameter fresh-air duct, = 254 square inches.
Indirect radiation, ⅔ by 200 = 168 square feet.
Adopt 200 square feet indirect radiation.

EXPANSION TANK.

781 by 5.76 = 4,500 cubic inches.
For closed system, in this case, 9,000 cubic inches.
A 15-inch pipe, 51 inches long, will answer for closed system.
Adopt 5 feet, = 60 inches, long.

There should be at least two-thirds of a square foot of surface in the indirect radiator to each square inch of cross-sectional area in the fresh-air duct, and it would be better if the indirect radiator could be from 50 to 100 per cent greater. It is usually troublesome to find room for the desired amount.

For desired cross-sectional area of the fresh-air duct, see "Ventilation."

It would take too long here to go into the proportions of boilers. For residences it is unnecessary, as you usually must take some ready-made pattern.

To the amount of surface, in square feet, required in the direct radiators, add that for the indirect radiators, and the sum is the total amount required. The corresponding grate area of boiler can be taken from Table II hereinafter given. Select a boiler having not less than the calculated area.

Plate IX is a drawing of a wrought-iron "saddle" boiler which has been found satisfactory. When desired the rear of it can be arranged so that the heat in smoke flue can be imparted to incoming fresh air through an iron plate, as shown.

The diameters of the pipe necessary to supply the radiators depends upon the total amount of the square feet of radiating surface supplied by the pipe. In the overhead method of hot-water heating, the branch pipe should be of the same size throughout.

The requisite sizes of pipes can be taken from Table IV. If one size pipe is sufficient by the table, but is more than 100 feet long, then a size larger should be taken. The radiator connections should each be the same size as the branch pipe.

The following is a copy of the calculation for a heating apparatus actually in course of erection. The factor 0.9 $\left(\frac{I-E}{I}\right)$, in this case, equals unity and therefore does not appear.

[For table see page 49.]

(To be continued.)

STAINED GLASS AS AN ARCHITECTURAL ADJUNCT.*

BY W. A. HAZEL.

"TRUTH," some one has said, "never can be confirmed enough," and nowhere does this statement apply with greater force than in matters of art.

When a truth has once found acceptance the wonder is that there should be any temptation to depart from it, yet history shows that whenever art has flourished or declined its rise or fall has been the result of its adherence to, or departure from, the laws which govern it.

All the arts cluster around that of architecture as the source from which they derived their being. "Men built houses before carving them, and carved before painting them," says Viollet-Leduc. Sculpture and painting are, therefore, but helpmeets of architecture, sustaining interdependent and harmonious relations each to each when justly balanced. We have so long lost sight of this truth and are so accustomed to regard sculpture and painting as independent arts, each sufficient unto itself, that it requires an effort to realize that in the beginning both arts were evolved as accessories to architecture, and that there was no sculpture nor painting except as decorative adjuncts.

The evolution of the stained-glass window may be traced step by step to this fountain-head of all the arts, for the stained window is only an offshoot of the earlier art of painting, which had at first only a decorative function. Painting at the very outset was of the nature of symbolic representation, and was one of the earliest arts in which the creative faculty of primitive man was brought into play. It was this symbolic art which the early Christians appropriated to their use, for various reasons: First. Because of its suggestiveness and power of appealing to the imagination of the illiterate, who were to be instructed in the faith. Second. Because, while having a peculiar significance to the initiated, it guarded the mysteries of the brotherhood from hostile scrutiny; also because there was at that time a dislike of direct representation of Deity. These were the practical ends which religious symbolism was designed to serve. But, as the church grew in wealth and power, it began to feel that one of the ways of glorifying God was in beautifying His temple; so beauty and utility conspired and caused to exist some of the sublimest creations the human mind could conceive. By degrees this symbolism grew into a more literal portrayal of church history and tradition, so that the walls of Roman and Byzantine interiors were decorated with frescos representing scriptural scenes, the apostles, saints and martyrs. These interiors, owing to the small window openings, were lighted for the sacred service by artificial means, tapestries often being hung over the windows. But when stained glass made its appearance in the twelfth century, probably from some oriental source, churchmen were quick to transfer their decorations from the opaque and poorly-lighted walls to the translucent surfaces of the windows.

In effecting this change, however, they did not lose sight of the fact that their window ornament as well as their wall decoration was to be kept subordinate to and in harmony with the architectural surrounding. All antique work is distinguished by this strict adherence to decorative principles, which does not permit either sculptured or painted ornament to transcend certain limits.

Stained-glass design, particularly of the earlier Romanesque period, had generally the effect of tapestry. The figure and all natural forms, when used as motifs, were severely conventionalized and in one plane, consequently without perspective or chiaroscuro. We may be able to determine exactly what constitutes the essentials of good stained glass and what its proper treatment should be by noting the properties of the antique art when at its best, and if we can rightly understand the cause of the decline of the stained window in the sixteenth century we may save from a similar fate that of the nineteenth century.

The advent of the Gothic style, with its reduced wall spaces and larger window openings, was the opportunity of the glass-worker of the twelfth century. To fill these vast openings with some material which should at once exclude the weather and admit the light was his task, and, as the antique glass could be made only in pieces of limited size, it became necessary to build up a mosaic of numerous pieces, joined by strips of lead, in order to make panes of area equal to the windows.

Throughout the mediæval period this mosaic method was strictly adhered to. The artists recognized the limitations laid upon them by the nature of their material, their designs being mostly confined to the arrangement of pieces of colored glass in geometrical and other fanciful patterns. They made no effort to conceal the unavoidable lead lines, but rather forced these to perform certain functions in the artistic as well as mechanical economy of their windows. But they refrained from attempting to make pictures out of them, and during this period of more than three hundred years there is no instance of an attempt at realistic portraiture. The antique workman was content to get the most out of his material in the way of gorgeous coloring. Design was of secondary importance and restricted in range.

The peculiar virtues of mediæval windows were due to the quality of the glass they had at hand. In its manufacture their knowledge as well as facilities were extremely meager, and their small knowledge of chemistry gave them a very limited pallette. But this handicap was itself the cause of much of the beauty of their raw material. Being obliged to make it in small pieces, they were necessarily forced to retain the mosaic process; this was well for the art. Then, too, their glass was heavy, of unequal thickness, full of bubbles, coarse grained and of uneven texture. All these mechanical defects made the antique glass the ideal material for mosaic windows; they made it scintillating and luminous, full of deep, mysterious colorings, making thinness and monotony impossible. Such was the best estate of the glorious old mediæval window, "casting a dim religious light," of which the poet sings.

Now, what was the cause of the decline? With the fifteenth century came the Renaissance, and with it the new form of art—oil painting. Just at this juncture, certain mechanical improvements were made in the fabrication of glass. Vitrifiable or enamel colors for glass painting were also discovered, and a yellow stain made from silver. These conspired to overthrow the old art of mosaic. In the first place the improved method of glass manufacture produced a more mechanically perfect material. It gave larger panes, uniform in thickness, smoother in texture, and more homogeneous—i. e., more compact, without the air bubbles which gave the gem-like effect. These changes alone meant loss of vitality in the material itself. It became thin, weak and monotonous. Then, the invention of enamel colors led the artist to attempt the imitation of the effects of oil-painting. This was particularly harmful. The craftsman threw away his fine old glass, and took the new smooth material upon which he could paint, loading it with the opaque enamel and still further deadening the glass which had already lost its vitality.

Of course it proved impossible to make a realistic *picture* in glass. The hard lead lines bounding the different planes of the perspective, destroyed all pictorial illusion, so, like the dog in the fable who saw his reflection in the water, the old artist dropped a choice morsel to seize a shadow, and—lost all. For three hundred years he had followed Truth. When he forsook her, his art disappeared.

From the beginning of the sixteenth century to the middle of the nineteenth, is a long leap, but during the interim the art left no record worth noting. There was the so-called revival in the eighteenth century, during which some restorations and repairs of old windows were made, and some new ones in imitation of the old. But it was not a revival in any true sense. A real revival is a reversion to principles and not a mere resurrection of old forms without the spirit which formerly animated them. No such revival occurred until the last quarter of the present century, when American artists inaugurated a new era in the history of stained glass, and placed the art upon a plane it had never before occupied. Returning to the antique mosaic method, American artists have made glass equal in every respect to that of the olden time. With the added virtue of almost limitless range of color, thereby furnishing an illustration of old principles taking root in new soil, springing into vigorous life, and bearing fruit before unknown. We not only abandoned the use of paint, which deadened the luster of the glass, but we reaffirmed the old truth—that stained glass is an accessory art, an architectural adjunct, designed to enrich that of which it is but an integral part; the architectural unit.

Mr. Van Brunt, speaking of the effect upon architecture of our geographical isolation, says: "We occupy a new country, having no inheritance of ruins, and no embarrassment of tradition; in matters of architecture we are absolutely free from historical prejudice," or—he might have added—historical example. This condition, however, was suddenly changed in 1876. In that year, the centennial exposition brought great numbers of European artists to America, and their work supplied the lack of example, not only with regard to architecture, but all the decorative arts as well. Our manufactures were given a needed stimulus, and then began that

*Paper read before the Minnesota Chapter American Institute of Architects.

wave of æstheticism which swept over the country, and has not yet subsided.

In the centennial year two great men and two great opportunities met and shook hands. Henry Hodgson Richardson and John La Farge were the men. The building of Trinity church and its decoration were the opportunities.

But for Mr. Richardson Trinity church would have had no existence, and had Trinity church not been built Mr. La Farge, one of the foremost living colorists, would not have been called upon to decorate it at a time when the air was full of these new influences, and he might have remained to the end of his days a painter of easel pictures only.

But, Mr. Richardson having built the church and Mr. La Farge having undertaken its decoration, it became evident that the "priceless glass" in vogue in Europe would prove inadequate for such an interior. So, spurred on by necessity, Mr. La Farge began making investigations and experiments in colored glass, with results which revolutionized the process of glass-making. Previous to this time we had gone so rapidly to the bad in the production of machine-made stuffs that we had about reached the point where the workman "pressed the button and the machine did the rest."

Now came the transformation. Manual dexterity, backed by intelligence, was substituted for senseless machinery. Improvement in the artistic quality of glass was at once manifest. The worthless stuff, which had supplanted the antique material, in its turn gave place to a new fabric having the same qualities possessed by the glass of the mediæval craftsman. Material, which had been previously discarded as imperfect and worthless by reason of accidents and miscalculations, was found to have just the variety of tone and color most desirable, so that the worst failure often included the greatest success. In the *new* we had rediscovered the *old* and in opalescent glass contributed a purely American product to art.

Now the question which concerns us as artists, whether architects or glassworkers, is this: After having seen this rejuvenated art occupy the high place which La Farge gave it—for he alone has held steadfastly to the fundamental decorative principle—shall we tempt the fate which blighted the art in the sixteenth century? We stand today as to the modern art in the same relation as did the fifteenth century artist to the antique. The next step may be forward or backward; which shall it be?

There is no such thing as remaining stationary; that is contrary to the universal law; there must either be progress or retrogression, growth or decay.

Art can never realize absolute perfection, but it is on the road to it so long as it holds to rock-bed principles. The art of the ancient Greeks is proof that the highest excellence is attainable and maintainable only by the observance of this law. Without desiring to take a pessimistic view of the situation, I do not hesitate to say that for stained glass in particular and the decorative arts in general I see "breakers ahead." The tendency to overstep the prescribed bounds of accessory arts is noticeable in some of our most prominent work, and the cause is not far to seek.

We produce our art, as we do everything else, on a large scale. Our art establishments are huge institutions. It is necessary to their maintenance that the public should buy. If it will not buy *art* we must sell what it wants; and if it doesn't see what it wants all it has to do is to ask for it. And we have scriptural warrant that "those who ask shall receive."

We are inventive and admire a "clever" thing more than we do an artistic thing. Consequently our bump of inventiveness is abnormally developed. The man who produces the *newest* thing, or the *biggest* thing, or the most *ingenious* thing is the artist par excellence—for the multitude. The *multitude* has the money and must be gratified if the artist has to violate every principle upon which his art is based. We have the national fault of letting our cleverness carry us beyond legitimate bounds, partly in mere exuberance of cleverness, partly for mere display, or a desire to win vulgar applause by being thought more clever than our fellows. It requires considerable moral stamina to stop short when the artistic conscience says, "thus far and no farther."

The greatest sinners in this respect are those who ought to and do know better, but cannot withstand the craving for popular favor. To be an artist and hold with one's conscience one must be pecuniarily independent and indifferent to popularity or he is liable to go begging, both for dollars and fame. As an illustration of this tendency, one instance will suffice: One of the most ambitious, recent stained-glass windows, and one which is oftenest cited as a "splendid work of art" was made by a well-known firm of reputed artists. In this window is reproduced Doré's picture, "Christ Leaving the Prætorium," in which, in my opinion, every law which should govern true decorative work is transgressed; not through ignorance, but knowingly and wilfully, for the sake of dollars and the applause of the multitude.

I am aware that the criticism I shall make involves a point debated among artists respecting the limit to which naturalistic treatment in glass may be successfully carried. It seems to me that the question should be, not what may or may not be successfully done, but what ought or ought not to be done, whether successfully or not. In stained-glass windows *pictures* should be rigidly excluded, because, upon principle, they are wrong. The aim of a picture is to create an illusion by a simulation of nature. In *decorative* work any treatment which admits a doubt as to the actuality of the thing decorated is *wrong*. A picture is an entity. Its values are intact within its own extent, and it is unrelated to anything beyond. But designs which are suitable for wall decorations or windows should make the surfaces of both self-evident. A painting which transmutes a solid wall into thin air is wrong in principle; its proper function is to *beautify* the *wall*, but not to make it a less substantial fact. The plane of the window is a continuation of the wall plane; therefore, to make a picture out of a window is *wrong*, because it resolves the window into other planes than that of the wall in which it lies, and for the stronger reason that it sets itself up as an independent entity when it should be but an integral part of an architectural unit. Consequently the transference of a large canvas painting to a window, as in the "Christ Leaving the Prætorium," banishes the window plane and leaves in its place a vista of palaces and multitudes and all the illusion of sky and air which perspective and chiaroscuro can accomplish. This is as obviously wrong as the "New Jerusalem" in Trinity church and the Ames memorial at North Eaton are right. The last conform to decorative principles; the first contravenes them.

From this it may be seen that the signs are not lacking which tell that the newly-recovered art is yielding to hurtful tendencies; is starting, or about to start, down hill again. It is the architects to whom we must look to check it by their influence. The public must be educated to the point of ability to know good from bad, or there is no future for architecture or its dependent arts. People should be taught that there is an absolute right and wrong in the realm of æsthetics; they must learn that art is not governed by caprice or arbitrary formulæ, but by well-known laws, easily ascertained, if one will but take the trouble.

In the hurry and impatience of this electric age we cannot hope perhaps ever to command the leisure of the ancient Greeks for the cultivation of the arts; neither will we come under such a dominating influence as were the Florentines of the fifteenth century, when "every new structure became a school of the eye and the taste." But it is not impossible for us to reach that condition when, by education, the judgment of the people will have become so good that artists will not hesitate to appeal to it. The assurance that merit can safely appeal to such a tribunal will stimulate each to his best endeavor. The artist and the public will react each upon the other; the artist educating the public by constantly keeping before it the highest ideals of his inspiration; he, in his turn, kept to the true path by the exactions of an educated and fastidious public, quick to recognize the powers exerted in its behalf and to commend and reward if also to criticize; each capable of appealing or being appealed to, confident of intelligent and sympathetic appreciation.

CHICAGO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the Chicago Chapter of the American Institute of Architects, on April 17, was largely occupied in listening to a paper by Mr. R. Guastavino, upon the development of tile fireproof construction.

After referring to a large experience in construction since his course of study in the School of Architecture in 1864, and the well-known constructive knowledge of Chicago architects, Mr. Guastavino said that, to give a concise description of the tile arches, or the timbrel arches, as they are more properly called in Spain, in consequence of the lightness and small thickness, and in order to fix principles, the speaker began by saying that this system belongs to the cohesive construction.

Divided in two classes, the first we shall call "Mechanical Construction," or by gravity. The second we shall call "Cohesive Construction," or by assimilation.

The first is found in the resistance of any solid to the action of gravity, when opposed by any other solid. From these conjunctive forces, more or less opposed to one another, results the equilibrium of the total mass, *without taking into consideration the cohesive power of the material set between the solids.*

The second has for base the property of cohesiveness and assimilation of several materials, which by a transformation more or less rapid, resembles nature's work in making conglomerates.

We can give another definition more precise and comprehensive for both systems, in saying that the first or mechanical system is, that all the pieces can be separated one by one and then rebuilt in the same or similar manner. To this class belong the Pyramids of Egypt and the Greek temples, etc. In "Cohesive Construction," on the contrary, the components cannot be separated without destroying the integral mass. To these belong the Babylonian walls of brick with hydraulic mortar; the vaults and cupolas of the Assyrian, Persian, Arabian, Roman and Byzantine; the antique and Middle Age conglomerate construction.

The structures built by the "gravity system" can be at any time taken down, in the pieces out of which they were formed. Thus, the stone or brick that yesterday formed part of a temple or monument dedicated to the memory of a hero can tomorrow belong to or form part of the walls of a stable; while, on the other hand, though man cannot again use the parts of cohesive construction for modern buildings, their ruins inspire respect and veneration, and only nature, with its slow but sure work of disintegration can take from this style of building its materials for her immense laboratory.

The materials employed in the construction by gravity, only require the physical quality of hardness; for the "cohesive construction," the materials must not only have proper physical conditions, but it is absolutely necessary to take into consideration the chemical properties of the substance employed. The use of the "cohesive system" was rendered impossible to many nations that

had neither the material nor the knowledge of its use at their disposal, while on the other hand all the civilizations and all nations could make use of the gravity system.

The base of these materials are mortars that do not require exposure to the air for their transformation or setting qualities, that is, hydraulic limes and cements, but for our specialty we must have cements of the quality of Portlands.

The way in which this kind of arch works is as follows: A "timbrel vault" of a single thickness of brick or tile has no more resistance than an arch or vault built in the "gravity system," because no matter how good the mortar may be there is only one verticle joint, and the bricks or tiles are working as voussoirs, consequently this form of arch belongs to the "gravity system"; but if we put another course over the first, breaking joints, and laid with hydraulic material, we will have the action of the cohesive force; in this way the mortar laid over the first course, or extrados, takes bond with it, and also with the course laid on top. As soon as the cement sets we will have shearing resistance represented by 17,820 pounds per square foot. In this manner we introduce a new additional strength to the arch, which is a peculiarity of the "timbrel arch system." In the "gravity system," the strength of gravity alone is the only force keeping the voussoirs in place by pressure against each other in the joints. These joints are not protected, and any reduction in the width of the joints, in consequence of pressure, or weight on the arch, *compromises the setting of the mortar.* For this reason in the "gravity system" *the mortar serves only as a cushion, also, if cement mortar,* because of bad setting, and adds no strength to the arch. But, in our "cohesive system," with horizontal broken joints, with 17,820 pounds per square foot shearing strength, the reduction in the verticle joints is protected absolutely, as can be proved by the following facts: First, we can build barrel arches of twenty feet span, and dome of sixty, seventy, or more, only three inches thick, using a center of one inch thick, and moving it along, as soon as a row of tiles are laid, which usually requires about fifteen minutes; second, it is common to see the workingmen walking over the arch, free from centers of any kind, some hours after it is built; and third, *we can run the center under the arch again when it is completed, which is the most practical illustration that the arch has had the absolute repose necessary for its settlement.*

These three remarkable circumstances are of great value to architects, as they can be put in the specifications and can be depended upon as absolute proof of the safety of the construction.

So we have for the "cohesive construction," the following advantages over the brick arch or any arch built by mechanical construction:

First — The protection of the verticle joints by introducing the new strength coming from the horizontal breaking joints.

Second — The less number of verticle joints, amounting to only five per cent of the full span, while the brick arch has ten per cent.

Third — The resistance to deflection (bending movement).

The result of these advantages is the surprising strength of the "timbrel arches," so that no one can at first understand how fifteen or twenty-foot beams, arches and domes of seventy and more foot span, three inches thick, and ten per cent rise, as we before said, can be laid, taking away the centers and giving them over to the uses of the building in a few hours, when an arch of brick, six-foot span, four inches thick, and ten per cent rise, requires for constructing it, strong and heavy centers, with repose for several days, and then is not a safe construction, as this span requires eight inches of thickness, as all architects and builders know.

We can consider as a safe relation between the brick and "timbrel arches," four feet six inches span, ten per cent rise, four inches thick, with cement mortar as is usual in buildings, as equivalent to a ten or twelve-foot span, "timbrel arch" three inches thick, eight to ten per cent rise.

The impossibility of having a flat arch built with voussoirs, principle strictly tight, in consequence of the imperfections and impossibilities of having a tight and well-set joint, because this joint is only worked as a cushion, is one of the main objections that the Catalonia and Valencian architects have against the use of flat hollow block arch for fireproofing buildings. The slightest settlement in the center, so common in these kinds of arches, opens the joints, and in case of fire you will see at once the smoke passing through and in consequence showing that air and gases pass from one habitation to the other; and although the cheapness of iron and the facilities that we have for manufacturing any kind of claywork gave a great impulse about twenty-five years ago to the system now in use — that is, hollow block, I iron beams, and so on — the said inconveniences soon became noticed, and it was found to be unfitted for our conception of fireproof buildings; but in places where we had never considered that system and never used it under any circumstances, is in cellars, ceilings, and very few in the first floors, because the places where it is most necessary to have a homogenous, tight and solid material as a general base for the building are the ceilings of cellars, because that is where the emanations, moistures, fires and complications of pipes, wires and conduits make it more necessary to have a perfect masonry construction.

But I do not say that the tile system is the only one adjustable for everything. The flat block ceiling has its advantages. Progress and new necessities and the manner in which we consider buildings today has somewhat changed their character, and many of them are not well adapted for full masonry construction. For instance: an office building cannot be so well adapted as a church, or hall, or library, and other public buildings of that character, but in each case the principle can be adapted with modifications always beneficial. With the tile method of construction the desirable forms are as follows: First, Walls: the most desirable ones should be hollow—I do not mean walls built with hollow materials, but walls built hollow, or tubular columns of clay, cement, or stone combined with iron.

Second, In ceilings it is preferable to use domes instead of barrels with solid or cohesive materials. The barrel arches are an exceptional construction and good under some circumstances, but they are not the best for cohesive construction, the right one being, as already stated, domes, and the spans should be 12 by 15 feet, or 14 by 17 feet.

Third, As a principle for the conception of any building inside of the system, the following conditions must be taken into consideration as guides: First, Floors must be perfectly tight between so as to have an absolute intercommunication, and to be as near as possible air-tight. Second, No wooden flooring, wooden wainscotings or wooden casings should be used. Third, Doors, windows and any openings should be prepared in such a manner, that any fire in one or more rooms could be isolated by stopping the alimentation of combustion, that is, combating the fire by direct asphyxia or want of air, which is a very easy matter, if well prepared for; but for this purpose, buildings must be divided into three different groups, which would require three different treatments.

First Group.—Private houses, office buildings, hotels and public buildings.

Second Group.—Department stores, factories.

Third Group.—Storage buildings.

For the first, tile construction has the advantage that each room can have its special dome supported by double tile partitions, and main walls all around. The partitions should be placed as much as possible one above the other, which practice is one of the recommendations of good classic construction. The same should be the case in office buildings. Each room could have a dome supported by double partitions. The same also in hotels.

For the second and third groups the precautions that should be taken are the same as in the first group, but in addition all windows and doors must be provided with double doors or shutters, one of them of sheet iron, so that all joints can be rejoined from outside in case of necessity.

I will remark, by the way, that to develop this system a Spanish architect, and especially a Catalonian, one in his own country, has an advantage: First, There, the architect who is inclined to the constructive parts of his profession has an opportunity at any time to be not only the architect of a building, but also the contractor of the same, so he is able to do as he pleases in regard to construction, and he feels safer. Of course, everybody knows that the architect is directly responsible before the owner, the public and the authorities, so it is hardly strange that practical and intelligent owners in Catalonia do not object to this, but, on the contrary, they prefer to give to the architect the contract, asking him to give bonds and guarantees. It is also easier, because by law the architect is directly responsible for any trouble on a building. The building department also compels the owner to have a responsible architect on the building, and if the architect is the contractor, the ordinances leave him free to do as he pleases in regard to construction, restricting only the hygienic part, and urban lines.

The speaker concluded by saying that the cost of the system referred to was not greater than others in vogue.

OUR ILLUSTRATIONS.

View in residence of Alma Tadema.

So-called house of Henry IV, at Ne'rac. Rendering by E. C. Jensen, Chicago, from photograph.

Remodeled residence for Elisha Gray, Highland Park, Illinois. Paul Starrett and Jules F. Wegman, architects, Chicago. Exterior view and view in hall are shown.

Cross-section of the Manufactures and Liberal Arts Building, World's Columbian Exposition, Chicago. Comparing truss of Machinery Hall, Paris Exposition, 1889.

Designs submitted in Detroit Chamber of Commerce Competition. Accepted designs by Spier & Rohns, architects, Detroit. The designs submitted by the following also received honorable mention: Mason & Rice, John Scott & Co., William S. Joy, Malcombson & Higginbotham. The designs published include the above and those submitted by the following: Rogers & Macfarlane, Mortimer L. Smith & Son, E. T. MacDonald. Prof. William R. Ware of New York was engaged as professional adviser. The invitation to architects was as follows:

The Chamber of Commerce of the City of Detroit are proposing to erect a building for their use and other tenants at a cost of not to exceed the sum of $400,000, and have appointed a building committee with full power to select an architect to carry on the work.

The building committee have invited John Scott & Co., Mason & Rice, Gordon W. Lloyd, Donaldson & Meier, Rogers & Macfarlane, Mortimer L. Smith & Son, E. E. Myers, R. E. Raseman, Julius Hess, Frederick H. Spier and Henry Ives Cobb to prepare a sketch or preliminary design for the proposed structure, for which they will be paid $150 each, and will receive and entertain designs from other architects of Detroit not so invited and will give these drawings equal consideration but no remuneration will be paid. Any of the competitors may, if they so desire, send in a second set of drawings.

All designs must be made in conformity with the following instructions: The building is to be constructed of fireproof materials and will be of first-class modern construction throughout and the total cost must not exceed the sum of $400,000 ready for tenants, including commissions and all other expenses of the building. The first story shall be on a level with the grade and the building shall be twelve stories high. The assembly hall shall be of not less than 4,000 square feet floor space.

The lot on which the building is to be erected is on the northeast corner of Griswold and State streets, with a frontage of 100 feet on State street and 88 feet

on Griswold and a frontage of 88 feet on alley 20 feet wide, parallel with Griswold street. The angles of corners being ninety degrees.

The following drawiugs and these only will be furnished by each competitor. They will be accompanied by a memorandum, copied by typewriting machine, explaining fully any characters of materials, any points in the desigu not obvious from an inspection of the drawings.

Plans of basement and different stories; two elevations; two sectious; a perspective.

These will all be drawu to a uniform scale of one-eighth of an inch to the foot, finished in line with India ink with drawing pen. No shadows are to be showu on the drawings. There is to be no brushwork except blacking in the windows and the sections of the walls and floors. The lettering is to be plain and simple, like ordinary printing type, and is to be confined to the names and dimensions of the rooms written on the middle of each.

The perspective also is to be drawn in line only, with one figure, with background and foreground, and with line shading. The scale of the perspective is to be the same as the drawings and is to be correctly drawn, with the southwest corner on the plane of the picture and the main fronts forty-five degrees with it and the point of vision five feet above the horizon and 250 feet distant. These drawings are to be made on white paper; the sheets of drawings are to be alike in sizes, surrouuded with single liue for a border.

Each drawing and also the accompanying memorandum is to be distiuguished by a motto or cipher and no handwritiug of any sort is to be put on either.

A sealed envelope bearing the same motto or cipher is to contain the name aud address of the architects.

Before making a final choice, the committee and their professional advisor will open the envelopes, containiug the names of the authors of the most approved designs in order that, other things having been first considered, purely business considerations may have their weight. These drawings are to be framed, glazed or even mounted on cardboard, but are to be sent flat in a portfolio, expressage paid, to A. A. Boutell, secretary, Chamber of Commerce, Detroit, Michigau, on or before February 25, 1893, 3 P.M.

The committee will employ the services of a professional adviser, who will be an architect, or competent person, a non-resident of Detroit, to assist them in making a decision.

The committee will appoint the selected competitor as architect of the building, if they find that in their judgment they are warranted in doiug so. But if, as may happen, they find themselves unable to choose, upon the evidence before them, between two or more of these candidates, they will invite the competitors among whom their choice then lies, to present uuder the instructions of the committee such further explanations as the nature of the questions at issue may require, and if they find it necessary to do so, will institute a second competition among them, for which a sufficient time will be allowed. The committee will then, after consultation with their professional adviser, select one of the competitors so invited to be the architect of the building, and will execute an agreement with him for the customary professioual compensation for such services as declared by the American Institute of Architects. Each of the architects invited to take part in the second competitiou, should such a competition be instituted, will receive from the committee the sum of $500 each as compensation in full for their additional services. In the case of the successful competitor these payments will be considered as payments on acconnt of his commissions as architect of the building. All drawings will be returned to the competitors, and as soon as the committee has made its selection, and they will not be shown to the other competitors, nor to the public, without the consent of their several authors previously obtaiued in writiug. Nor shall anything shown in any of the rejected designs, or otherwise suggested by the unsuccessful competitors, which is original as to this competition, be adopted and made use of in the building, without the consent of its author, and proper remuneration being made him, the amount thereof to be agreed upon between him and the committee.

Photogravure Plate: Front view, cottage for M. E. Ingalls, Hot Springs, Virginia. G. W. E. Field, architect, Richmond, Virginia. Bowling alley, Hot Springs, Virginia. G. W. E. Field, architect.

PHOTOGRAVURE PLATES.

(*Issued only to subscribers to the Photogravure edition.*)

St. Louis Medical School. Eames & Young, architects.

Studio Building, St. Louis, Missouri. Eames & Young, architects.

Chapel, Graceland Cemetery, Chicago. Holabird & Roche, architects.

Entrance Gate to Portland Place, St. Louis, Missouri. T. C. Link, architect.

Residence, No. 3671 Lindell avenue, St. Louis, Missouri. Eames & Young, architects.

Dormitory, Lake Forest University, Lake Forest, Illinois. Pond & Pond, architects, Chicago.

Annie Durant Cottage, Lake Forest University, Lake Forest, Illinois. Pond & Pond, architects, Chicago.

MOSAICS.

MESSRS. ORR & LOCKETT, of Chicago, the representative hardware firm, have removed from 184 and 186 Clark street to more extensive quarters at 50 Randolph street and 71 State street.

GOULD & ANGELL, architects, of Providence, Rhode Island, announce the change in the firm name to Gould, Angell & Swift, by the admission of Mr. Frank H. Swift, with offices at 87 Swartz building, Providence, and in the Boudoin building, Boston.

THE "Union syndicate des Architectes Françaises" has decided to be represented as a society collectively at the Universal Exposition at Chicago. The works, which will be represented by photographs, will be divided into four classes, as follows: First, Public buildings—Schools, colleges, city halls, etc. Second—Churches. Third, Private buildings—Country mansions, apartment buildings, city residences, etc. Fourth—Factory and other commercial or industrial buildings.

A MOVEMENT, which had been agitated in Kansas City for several weeks, to bring the architects of that city into closer relations with other building trades and professions, was got fairly under way May 3, when the names of thirteen leading architects and firms were posted for membership in the Builders' and Traders' Exchange. This exchange boasts a very large membership, which has been materially added to at every meeting this spring, and it is in a decidedly flourishing condition. The introduction of the architects will doubtless prove an element of strength and value, while the architects themselves should reap no little benefit from the forming of closer ties with men for whom they have much to do and the material enlargement of a circle of acquaintances.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than $5,000 are not published.

Atlanta, Ga.—Architect G. L. Norman: For W. A. Gregg, a stone and brick residence; to cost $10,000.

Chicago, Ill.—It is one of the architectural signs of the times in Chicago not without a certain degree of significance, that many of the largest offices are comparatively resting; waiting for something to turn up. It is an exception, in fact, at the present writing, to find an architect who says he is busy. Most of these architects have let all but contract draftsmen go or those whose places it is hard to fill. As one architect expressed it: "We have about three million dollars' worth of work in sight. It all might come in in a week, or we may never do any of it. In order to meet such a demand the best men must be held." One prominent architect has decided to close or rent his office for six months. This semi-stagnation is due, according to the best judges, first to the rise in building materials last fall, next to the threateued and actual strikes, the effect of both causes being to postpone projected building. Work will probably be largely resumed by July or August, at which time it is supposed that labor and materials will be cheaper. It is not in any way indicative of a lessening demand or of over-production, but an answer to those material dealers who shoved up the prices of common brick and other materials last fall, and the combination of labor unions and their consequent control of the price of labor. As soon as capitalists see that they will be allowed to have some voice in the matter and can feel that a building can be completed upon the first estimate of cost, building in Chicago will become brisk again, but meauwhile higher rents will be obtained by landlords and workmen will have to seek elsewhere for the employment they cannot obtain in Chicago upon their own terms.

Architects Turnbull & Postle have prepared plans for G. C. Fetter, corner of Leavitt street and Campbell Park, for a three-story and basement apartment house, 24 by 90 feet in size, to be of Auderson pressed brick and stone front; have hardwood finish, sanitary plumbing, etc.

Architects Crowen & Richards: Made drawings for two two-story and basement flat buildings, to be erected near the World's Fair for Dr. Strickland. They will be of frame with brick basements; have all the sanitary improvements, etc.; size 35 by 120 feet each.

Architects Miller & Burns: For Adolph Berger, on Burliug street near Wrightwood avenue, a two-story and basement house, 22 by 46 feet in size, to be of stone front; have all sanitary convenieuces, furnace, etc.

Architect Arthur W. Cole: For John M. Whitehead at Hillsboro, Illinois, a two-story residence, size 30 by 46 feet, to be of frame construction with brick basement; have all the best of plumbing, gas fixtures, furnace, etc.

Architect C. H. McAfee: For B. Cavanaugh in Lake View, a two-story residence, 32 by 49 feet in size, to be of stone basement and first story with pressed brick and frame above; have hardwood mantels and interior finish, the best of sanitary plumbing, and cost about $10,000. For J. J. Gash, at La Grange, a two-story and cellar frame residence, to have a stone basement; hardwood finish and the sanitary plumbing. For P. T. Heintz, on Fourteenth street, a three-story flat building, 42 by 46 feet in size, to be of pressed brick and stone front; have bathrooms, closets, mantels, etc.

Architects McMurray & Davis: For N. T. Van Pelt, at Cheltenham Beach, a two-story residence, 24 by 48 feet in size, to be of stoue basement and frame above; have hardwood finish, all the sanitary arrangements, furnace, etc. For E. F. Parr, on Seventy-ninth street, a two-story residence, size 25 by 64 feet, to be of frame construction with stone basement; have the best of plumbing, furnace, mantels, etc. Also have been appointed architects by the syndicate which has purchased the "Vincennes" apartment house to rearrauge and complete this structure. The building will be six stories in height and will front 96 feet on Vincennes avenue, and 86 feet on Thirty-sixth street. It will be blue Bedford stone to the second story window sills, and above this will be of buff pressed brick and copper coruice; the interior will be finished in hardwood, and the best of sanitary plumbing will be put in; electric light, steam heating, etc., will be put in and the cost of the complete structure will be $150,000.

Architect George W. Maher: Prepariug drawings for addition to the power house at Edgewater for the Chicago & North Shore Street Railway Company. It will be constructed of pressed brick and terra cotta, and be 50 by 217 feet in size. Also, making plans for ten two-story, basement and attic residences, to be erected at Edgewater, for J. L. Cochran. Some will be of frame and others of brick veneer—colored and Roman brick; hardwood finish, the best of sanitary improvements, electric light, furnaces, etc.

Architect D. A. Lapointe: Making plans for a two-story dining hall, 66 by 130 feet in size, to be added to the Mecca hotel, Thirty-fourth and State streets; it will be constructed of iron, copper, stone and glass, and be of novel aud handsome design; it will be of fireproof construction, have marble entrance, steam heating, electric light, etc.

Architects Fry & Cuuningham: For J. B. Moulton, corner of Trumbull avenue and Twenty-third street, a two-story flat building, 22 by 42 feet in size; to be of pressed brick and stone front, have all the sanitary plumbing, furnace, etc. Also, making plans for a four-story store and apartment building; size 50 by 100 feet; to be erected on Forty-sixth street; to be of stone for the first story, and above this will be of pressed and ornamental brick. Also, making plans for three-story flat building, 25 by 70 feet in size, to be erected on Fulton street near Kedzie avenue; to be of mottled Roman pressed brick and stone front, have hardwood finish, bathrooms, closets, mantels, washbowls, heating, etc.

Architect Irving W. Kelley: Made plans for a two-story, basement and attic parsonage, to be built at Chicago Heights, for the Presbyterian Church. It will be two stories and 30 by 50 feet in size, have all the sanitary plumbing, mantels, furnace, etc.

Architect August Maritzen: For Milwaukee Brewing Company, a complete brewiug plaut of fifty-five thousand barrels capacity, to be erected at Milwaukee, Wisconsin. The main building will be five stories in height, and 120 by 120 feet in size, of brick and steel construction. Also, two-story and basement bottling house, 100 by 200 feet in size; to be of pressed brick and stone; to be built on Burling street, Chicago. Also, for Whirlpool Brewing Company, at Niagara Falls, New York, a brewery of 20,000 barrel capacity; main building to be four stories in height, of pressed brick and stone. For Theodor Harn's Excelsior Brewing Company, at St. Paul, Minnesota, a 24,000-barrel storage warehouse; also, new wash house, racking house, etc.; cost about $70,000. For R. Heger, at Jefferson, Wisconsiu, a 100,000-bushel elevator; also, new kiln house and addition to malt house. To be of pressed brick and stone, steel, etc.

Architects Marshall & Ryder: For P. L. Clark, at River Forest, a two-story, basement and attic residence, 48 by 65 feet in size, to be of frame construction, with stone basement, hardwood finish and mantels, electric light, hot-water heating, the best of sanitary plumbing and laundry tubs; to cost abont $10,000. For Laug & Carleton, on State street, near Van Buren, a three-story flat building, 25 by 60 feet in size, to be of pressed brick and stone front, have sanitary arrangements, etc. For H. R. Kiug and James McGee, at Milwaukee, two two-story, basement and attic residences, 33 by 45 feet each, to be of tile construction; they will have hardwood finish, electric light, furnaces, mantels, laundry tubs, the best of sanitary plumbing, and cost about $16,000.

Architects Huehl & Schmid: For M. Kavanaugh, at Utica, Illinois, a two-story store and flat building, 38 by 95 feet in size, to be of pressed brick and stoue front, with galvanized iron bays, bathrooms, closets, mantels, electric light, furnaces, etc. For N. M. Peters, on Racine and Noble avenues, a three-story store and flat building, 50 by 76 feet in size, to be of pressed brick, stone and terra cotta on two sides, have bathrooms, closets, washbowls, mantels, etc.

Architects Faber & Pagels: For the La Salle Turners, at La Salle, Illinois, a three-story and basemeut Turn-hall, 65 by 112 feet in size, to be of pressed brick and stone, with truss roof; it will be a handsome building in the Romanesque style of architecture. On the first story will be stores and dining

rooms and above a first-class opera house with opera chairs to seat about fifteen hundred people. There will also be full-sized gymnasium, billiard room, card rooms, club rooms, toilet and dressing rooms, offices, etc. The building will be lighted by electricity, have steam-heating and all improvements. Also making plans for a two-story flat building, to be erected on Laurel avenue, Maplewood, for D. Carlson.

Architect John Hendricks: For H. Davis, at Sheldon Heights, three frame cottages, to have brick foundations, bathrooms, closets, mantels, etc. For A. Bloom, on DeKoven street, a three-story addition, 20 by 25 feet.

Architect J. G. Rogers: For R. A. Waller and H. J. Peet, eleven two-story residences, 35 by 50 feet in size, to be erected at Buena Park; they will be of stone basements and frame superstructures, in various handsome designs; the best of sanitary and modern improvements will be put in and they will cost from $8,000 to $10,000 each. For F. S. James, at Buena Park, a handsome two-story, basement and attic residence, size, 40 by 70 feet; it will be constructed of mottled Roman pressed brick with trimmings of buff Amherst stone; the interior will be finished in hard woods and have electric light, hot-water heating, carved stone mantels, etc.

Architect Albert Lang: For Dr. E. Kargan, on Winchester avenue between Taylor and Twelfth streets, a two-story and basement residence, 25 by 67 feet in size; to have a stone front, hardwood finish, sanitary plumbing, mantels, furnace, etc. Also making sketches for a three-story and basement apartment house, size 109 by 124 feet; to be of pressed brick and stone front; cost about $40,000.

Architects E. Barrath & Co.: For Fowler Bros., a four-story lard refinery, size 264 by 104 feet; to be erected in New York; cost about $65,000. For the Swedish Ceramic Manufacturing Company, corner of Fifty-ninth and Throop streets, a two and one-half story brick factory 85 by 129 feet in size; to be of pressed brick and stone front; cost, $40,000.

Architect K. L. Lehman: For Lehman & Devold, a three-story store and flat building, 90 by 25 feet in size; to be of buff pressed brick front with stone trimmings; it will be erected corner of Seymour and Division streets. Also for the World's Fair Tower Company, a two-story restaurant; 140 by 140 feet in size, to be of frame construction, have plumbing, electric light, etc.; cost about $40,000.

Architect F. Foehringer: For William McCain, at 439 La Salle avenue, a three-story flat building, 25 by 60 feet in size, to be of stone front, have steam heating, gas fixtures, bathrooms, closets, mantels, etc.

Architect C. L. Tuthill: For H. Frennd, at Rogers Park, a two-story residence; to be of frame with brick basement; have plumbing, mantels, furnace, etc.; cost $7,000.

Architect J. E. O. Pridmore: For W. A. Pridmore, at Windsor Park, a three-story store and flat building, 100 by 50 feet in size; to be of frame with brick foundation; have bathrooms, closets, etc.

Architect R. Rosenstock: For L. B. Montonya, a four-story and basement apartment house, size 60 by 121 feet; to be of stone front, have all improvements and cost about $40,000.

Architects Shipley & Jones: Made plans for a two-story frame church and Sunday-school, size 48 by 59 feet; to be erected at Elsemere. Also made plans for a summer home for the Epworth League, to be erected at Lake Bluff; it will be two stories, 50 by 58 feet in size; to be of frame construction, have stone foundation, plumbing, electric light, etc.

Architect James Burns: For Lelivelt Brothers, on Twelfth street, near Sawyer avenue, a two-story store and flat building; size 24 by 84 feet; to be of stone front, have sanitary plumbing, mantels, etc.

Architect George Grussing: For Neils Junl, at 432 Potomac avenue, a two-story and basement flat building; size 30 by 52 feet; to be of stone front, have all the sanitary improvements, hardwood trimmings; cost $10,000.

Architects Treat & Foltz: For H. Vollme, on the southwest corner of Ellis avenue and Forty-third street, a four-story apartment house; size 150 by 125 feet; to be of pressed brick, stone and terra cotta, have all improvements. For H. C. Hullinger, on the northwest corner of Indiana and Rush streets, a five-story apartment house; size 100 by 100 feet; to be of pressed brick, stone and terra cotta on two sides.

Architect W. M. Walter: For James T. Hair, on Adams street and Center avenue, a four-story store and flat building; size 75 by 32 feet; to be of pressed brick and stone front.

Architect H. T. Park: For A. J. Park, on Forty-third street and Monroe avenue, a two-story flat building; size 22 by 50 feet; to be of pressed brick and stone.

Architects Snyder & Nothnagel: For E. C. Minas, at Hammond, Indiana, a three-story store and flat building; size 50 by 100 feet; to be of stone front, have bathrooms, closets, wash bowls, mantels, gas fixtures, laundry tubs, etc.; cost about $20,000.

Architects Toennigs & Harding: For N. M. Cronholm, corner of Fifty-seventh street and Drexel avenue, a three-story flat building; size 150 feet front and 45 feet deep; to be of pressed brick and stone, have all sanitary improvements, and cost about $30,000. For T. O. Lett, at Southport avenue, near Grace, a three-story and basement flat building; size 44 by 60 feet; to be first story of stone and above of pressed brick and stone; cost about $20,000. Also made drawings for synagogue for Abrahams congregation; to be erected at Marshfield avenue and Twelfth street; size 125 by 63 feet; have handsome stone front, the interior being finished in Georgia pine; will put in steam heating, electric light, stained glass windows, modern conveniences, pews to accommodate a congregation of 1,100; cost $40,000.

Architect E. M. Newman: For Parker Grace, on Sheridan and Grace avenues, a two-story, basement and attic residence; to be of frame construction with stone basement, have all the modern improvements, heating, etc.

Architect J. E. Schiller: For the Colored People's Relief Union, on Twenty-third and State streets, a two-story building; size 50 by 100 feet; to be of pressed brick and stone front, have bathrooms, closets, washbowls, heating, etc. For Prof. J. N. McCann, at Green Bay, Wisconsin, a three-story business college; size 54 by 82 feet; to be of pressed brick and stone front, hardwood interior, steam heat, electric light, bathrooms, closets, washbowls, mantels, etc.

Architect J. C. Brompton: For Marpole Willis, on Sheffield avenue near Addison street, a three-story apartment house, size 44 by 70 feet; to be of stone and pressed brick, have hardwood finish and mantels, bathrooms, closets, washbowls, electric light, steam heating, etc. For J. L. Cochran, at Edgewater, four handsome two-story, basement and attic residences; to be of frame construction with stone basements, have the best of sanitary improvements, electric light, etc.

Architect Robert Rae: For M. Tillotson, on Thirty-ninth street east of Cottage Grove avenue, a four-story and basement livery stable; size 50 by 135 feet, to be of stone front, have steam heating, electric light, carriage room in basement, office and store in front; cost $30,000. For George Smith, at Valparaiso, Indiana, a two-story residence; to be of frame with stone basement, have hardwood finish and mantels, electric light, bathrooms, closets, washbowls, furnace, etc.; size 35 by 50 feet. For Hygeia Water Company, on the South Side, a three-story warehouse; size 75 by 150 feet, of common brick. For Chicago Fly-Casting Club, a one-story clubhouse, facsimile of Sir Izaak Walton's fishing house which was erected in England in 1674. It will be for the accommodation of the anglers of the country visiting the World's Fair.

Architect William Griesser: For Valentine Mueller, at 502 and 504 Larrabee street, a three-story building and a two-story building; to be of pressed brick and stone front; and cost about $40,000. For Jacob Kuebeler, at Sandusky, Ohio, a five-story brewhouse; to be of pressed brick and stone front. For Carl Coerper Brewing Company, at Thirty-ninth and Union avenue, a two-story office building; to be of pressed brick and stone front.

Architect J. N. Emmons: For Rockwell, Taylor & Co., on Cottage Grove avenue near the World's Fair, a two-story store and apartment building; 100 by 125 feet in size; to be of frame construction, have bathrooms, closets, washbowls, electric light, etc. For M. Ellington, a series of sheds for horses about 90 by 400 feet in size; to contain offices, waiting rooms, etc.

Architect Franklin P. Burnham: For G. W. Rice, at 1375 Washington boulevard, a three-story residence, 24 by 88 feet in size; to have a stone front, hardwood finish, steam heating, electric light, etc.

Architect C. F. Hermann: For J. Knoll, on the southwest corner of Clifton and Belmont avenues, a three-story and basement store and flat building; 26 by 80 feet in size; to be of pressed brick and stone front, have bathrooms, closets, washbowls, mantels, brick bay windows. For John Hufmeyer, at Lane Park, a two-story residence, 30 by 42 feet in size; to be of frame with brick basement, have bathrooms, closets, mantels, hot-water heating, etc.

Architect J. A. Bougard: For Paul Sauber, on Stony Island avenue and Sixty-seventh street, a two-story hotel and pavilion; size 40 by 70 feet; to be of frame; will put in washbowls, closets, gas fixtures, etc.

Architect Oscar Lievendahl: For E. A. Enders, on Warren avenue near California avenue, a three-story and basement flat building, 37 by 82 feet in size; to be of cement stone front, have bathrooms, closets, washbowls, laundry tubs, hardwood finish and mantels, electric wiring, bells, speaking tubes, steam heating; cost about $25,000.

Cincinnati, Ohio.—Reported by Lawrence Mendenhall The building situation has not changed materially since last report, but, if any, for the better. The wet weather has been decidedly bad for a painters' strike, and long before this journal appears all will be settled. The journeymen have had their ardor and prospects decidedly dampened. Our new city hall will be dedicated May 13, and its dedication will be the event of many years.

Architect W. W. Franklin has drawn plans for a large flat building for Charles H. Domhoff (M. Addy & Co., Cincinnati); materials: pressed brick, tin roof, mantels, grates, gas, plumbing, iron fronts, etc.; cost $10,000. Also, dwelling for W. F. Thorne, Cincinnati; materials: buff pressed brick, slate roof, gas, plumbing, stained glass, grates, mantels, electric bells, etc.; cost $13,000. Also, for Dr. W. L. Davis, Price Hill, Cincinnati; materials: pressed brick, stone, slate roof, stained glass, gas, plumbing, grates, mantels, furnace, etc.; cost $10,000.

Architects Des Jardins & Hayward report: For the Avondale M. E. Church, Cincinnati, a parsonage; materials: pressed brick, stone trimmings, furnace, slate roof, gas, plumbing, blinds, etc.; cost $7,500. Also, for George W. Law, a residence; materials: brick, slate roof, hardwood finish, grates, mantels, gas, plumbing, etc.; cost $12,000.

Architect James W. McLaughlin has drawn plans for a residence for R. H. Shoemaker; materials: buff brick, terra cotta, tin roof, furnace, grates, mantels, mosaic, gas, plumbing, etc.; cost not given. Also plans for a large store or office building for Joseph and Warren Rawson; materials: iron and pressed brick, terra cotta, elevators, plate glass, fireproofing, etc.; cost not given.

Architect Henry E. Siter reports: For Mr. James Heekin a residence; materials: frame, slate roof, hardwood finish, grates, mantels, gas, plumbing, blinds, etc.; cost $13,000. Also for Merrill Chemical Company, Cincinnati, a manufacturing plant; materials: brick, tin roof, steam heat, elevator, gas, machinery, etc.; size, 207 by 137 feet, four stories; cost not given.

Architects Daniel Hannaford & Sons report: For Frank J. Jones, Cincinnati, a store building; materials: pressed brick, tin roof, iron front, elevators, grates, mantels, gas, plumbing, etc.; size, about 75 by 75 feet, eight stories; cost not given. Also plans for a large store building for the George H. Dean, Kite Brothers' Company; materials: iron, pressed brick, iron roof, elevators, etc.; cost not given. Also for the German Methodist Church, Mickeu avenue and Locust street, Cincinnati, a church edifice; materials: pressed brick, slate roof, pews, organ, stained glass, etc; cost $20,000.

Architect Emil G. Renckert has prepared new plans for Market House; size, 383 by 33 feet, two stories high; materials: pressed brick, slate roof, iron, cement floors, refrigerators, etc.; cost $35,000.

Architect G. W. Drach reports: For William Woods (Chatfield & Woods), a warehouse; materials: brick, tin roof, elevator, etc.; size, 53 by 57 feet, four stories high; cost not given.

Architects Nash & Plympton report: A church at Blanchester, Ohio; materials: brick, stone trimmings, slate roof, hardwood, pews, organ, etc.; cost $8,000. Address Mr. E. D. Smith, care Blanchester, Ohio, Bank. Also remodeling an Episcopal church at Hamilton, Ohio; this will cost, with additional building, $15,000.

Architect W. C. Lawrence has drawn plans for a store and flat building for Renben B. Brooks (care architect). Materials: pressed brick, tin roof, iron, pine finish, grates, mantels, gas, plumbing, etc.; cost $15,000.

Architects Ditto & Wisenall report as follows: For the Amos Shinkle estate, Covington, Kentucky, a block of six three-story buildings; materials: pressed brick, tin roof, grates, mantels, blinds; cost $20,000. Also dwelling for J. W. Clendenning, Covington, Kentucky; materials: pressed brick, slate roof, grates, mantels, furnace, blinds, stained glass, etc.; cost $4,500. Also for James McDonald (care architects) a residence; materials: pressed brick, slate roof, grates, mantels, blinds, gas, plumbing, etc.; cost $5,000.

Architect Edward Schlochtermeyer reports: For St. Agnes' Catholic Congregation, at Bond Hill, a church; materials: pressed brick, slate roof, stained glass, pews, altar, organ, etc.; cost $10,000.

Architects Sweeny & Robinson report: For James Murdock, Jr., a residence; materials: frame, slate roof, hardwood finish, furnace, stained glass, gas, plumbing, grates, mantels, etc.; cost not given.

Cleveland, Ohio.—Architects Williams and Cole report a colonial residence for H. L. Hebebrand on Kensington street, cost $7,000; residence for W. P. Johnson, Amesbury avenue, style colonial, cost $10,000. By C. E. Cole, before partnership was formed: additions to warehouse of the Gibson & Price Lead Company, St. Clair street, cost $10,000; alterations in residence for John Lersch, Elyria, Ohio; office building for Mr. Saxton, West Side; alterations in two houses at Rocky River, Ohio, for Charles Fries, Esq.

Architects French and Chapman report a stone church for the Second German Reform congregation, at the corner of Woodland avenue and Putnam street; 48 by 80 feet in size; slate roof, gas, wired for electricity, furnace heat; cost $10,000.

Architect S. R. Badgley reports: Pilgrim Congregational Church, corner of Jennings and Starkweather avennes; a brownstone structure; 130 by 140 feet in size, slate roof, lighted by gas and electricity and heated by the hot-blast system; cost $75,000; it will be a thoroughly modern institutional church, with reading rooms, reception rooms, gymnasium, dressing rooms, bathrooms, parlors, dining-room, kitchen and pantries in the basement, with auditorium, galleries, Sunday-school and class-rooms above. A frame and shingle residence for George A. Rudd, with all modern improvements, including hot-water heat; cost $6,000. Baptist church, at Gouvernenr, New York, 72 by 90 feet in size; marble, tin, tile and shingles; cost $15,000. Foundry and manufacturing building at Chagrin Falls, Ohio, for the Dippo Manufacturing Company, 130 by 150 feet, one and two stories; cost $10,000. Business block, on Euclid avenue, near Erie street, 36 by 82 feet, three stories; pressed brick and stone trimmings, steam heat; cost $8,000. Frame and shingle residence for Frank A. Rogers; 32 by 50 feet; cost $4,000. Gorden avenue Methodist Episcopal church, brick and stone, 44 by 80 feet; cost $7,000.

Denver, Colo.—Architects Baerresen & Brothers: For S. P. Large, a two-story brick dwelling; size 28 by 46 feet; cost $7,000. For Leonard & Montgomery, a four-story business block; size 62 by 125 feet; brick and stone; cost $40,000.

Architect F. C. Kidder: For the Third Congregational Church Society, a one-story church building; size 45 by 51 feet; brick and stone; cost $6,000.

Architect James Murdock: For F. A. Birchard, a two-story dwelling; brick and stone; size 28 by 46 feet; cost $9,900.

Architects Varian & Sterner: For R. A. Cutter, a two-story brick dwelling; size 36 by 51 feet; cost $10,000.

Architects Eidbrooke & Co.: For the Denver Packing Company, a five-story store building; brick and stone; size 50 by 120 feet; cost $35,000. For S. S. Badger, a two-story dwelling; brick and stone; size 30 by 50 feet; cost $8,000.

Architect Frank Goodnow: For Mrs. Barbary E. Kettle, a two-story brick house; size 35 by 60 feet; cost $18,000.

Architect F. J. Sterner: For self, a two-story brick residence; size 37 by 47 feet; cost $10,000.

Architect H. S. Bailey: For O. C. Lehow, a two-story stone dwelling; size 36 by 50 feet; cost $10,000.

Architect A. M. Gove: For Dr. W. W. Grant, a two and one-half story brick dwelling; size 44 by 47 feet; cost $12,000.

Pittsburgh, Pa.—Architect T. D. Evans: For the South Side Hospital, a brick and stone building; to cost $40,000.

Architects Neal & Hopkins: For the First Unitarian church; the building will cost $8,000.

Architects Wood & Lovell, of Chicago: For E. Wilt, a theater and hotel building, size 73 by 212 feet; to cost $100,000.



FRONT VIEW, COTTAGE FOR M. E. INGALLS, HOT SPRINGS, VIRGINIA.

G. W. E. FIELD, ARCHITECT, RICHMOND, VIRGINIA.



INLAND ARCHITECT PRESS.

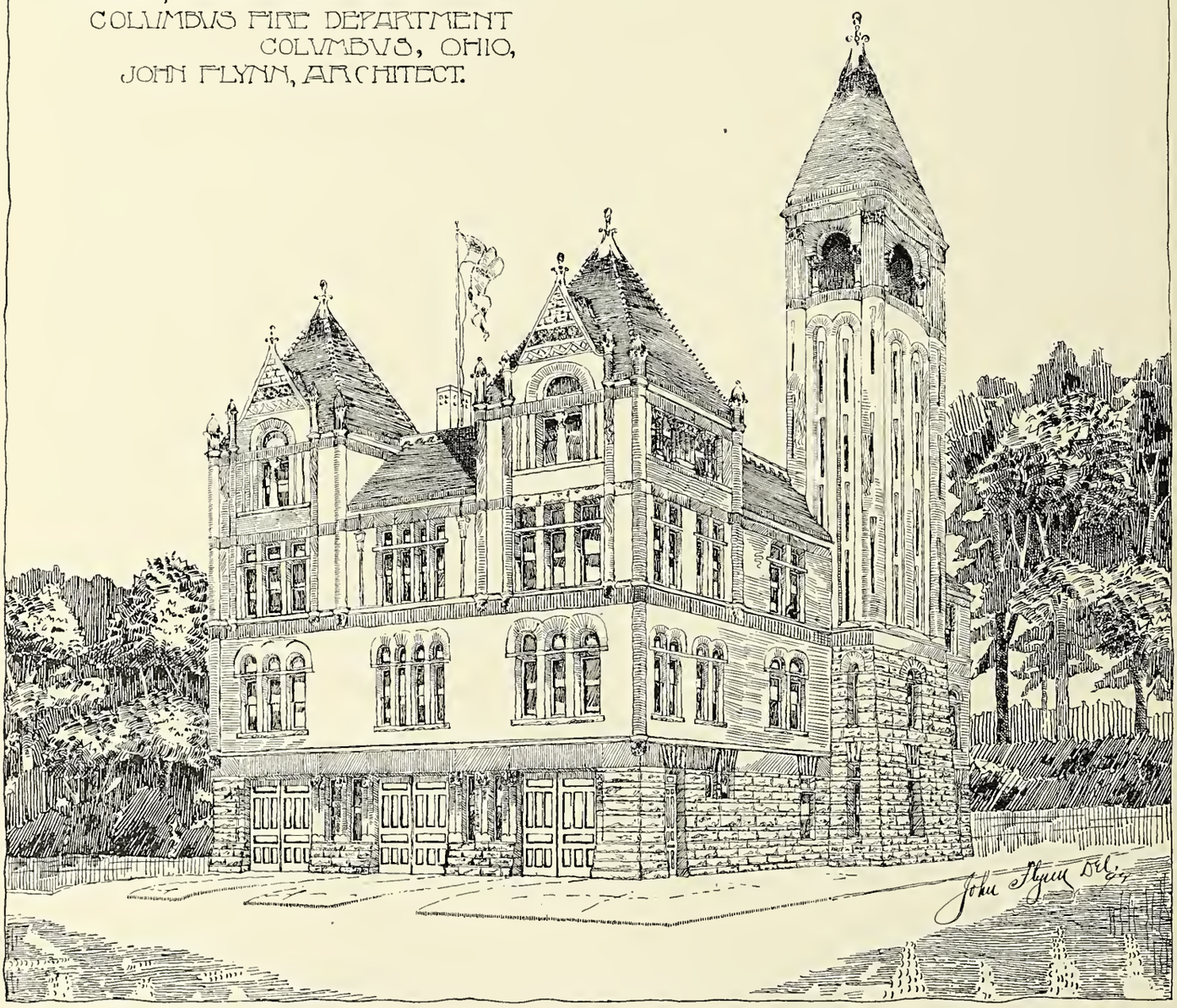
BOWLING ALLEY, HOT SPRINGS, VIRGINIA.

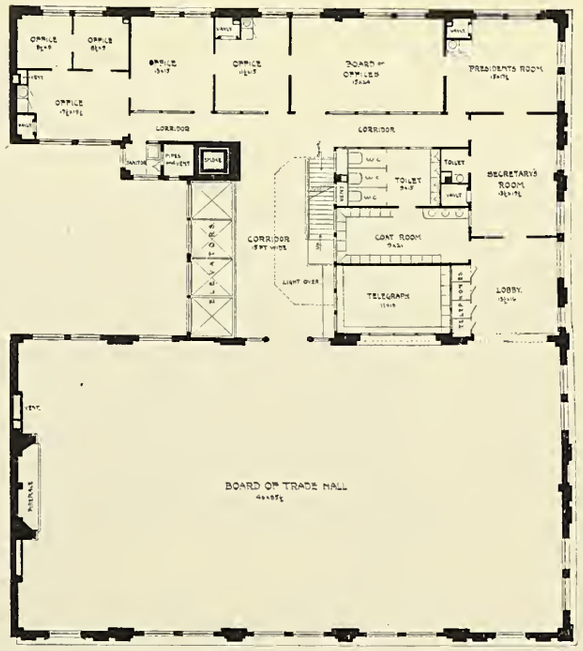
G. W. E. FIELD, ARCHITECT, RICHMOND, VIRGINIA.



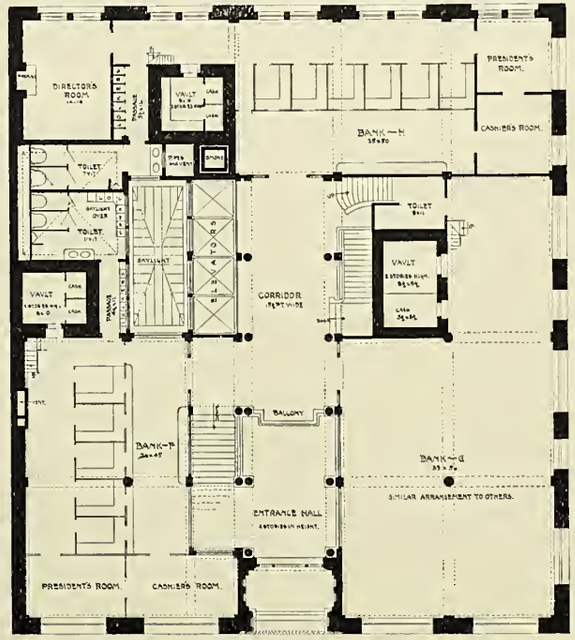
VIEW IN RESIDENCE OF ALMA TADEMA.

HEADQUARTERS ENGINE HOUSE
COLUMBUS FIRE DEPARTMENT
COLUMBUS, OHIO,
JOHN FLYNN, ARCHITECT.

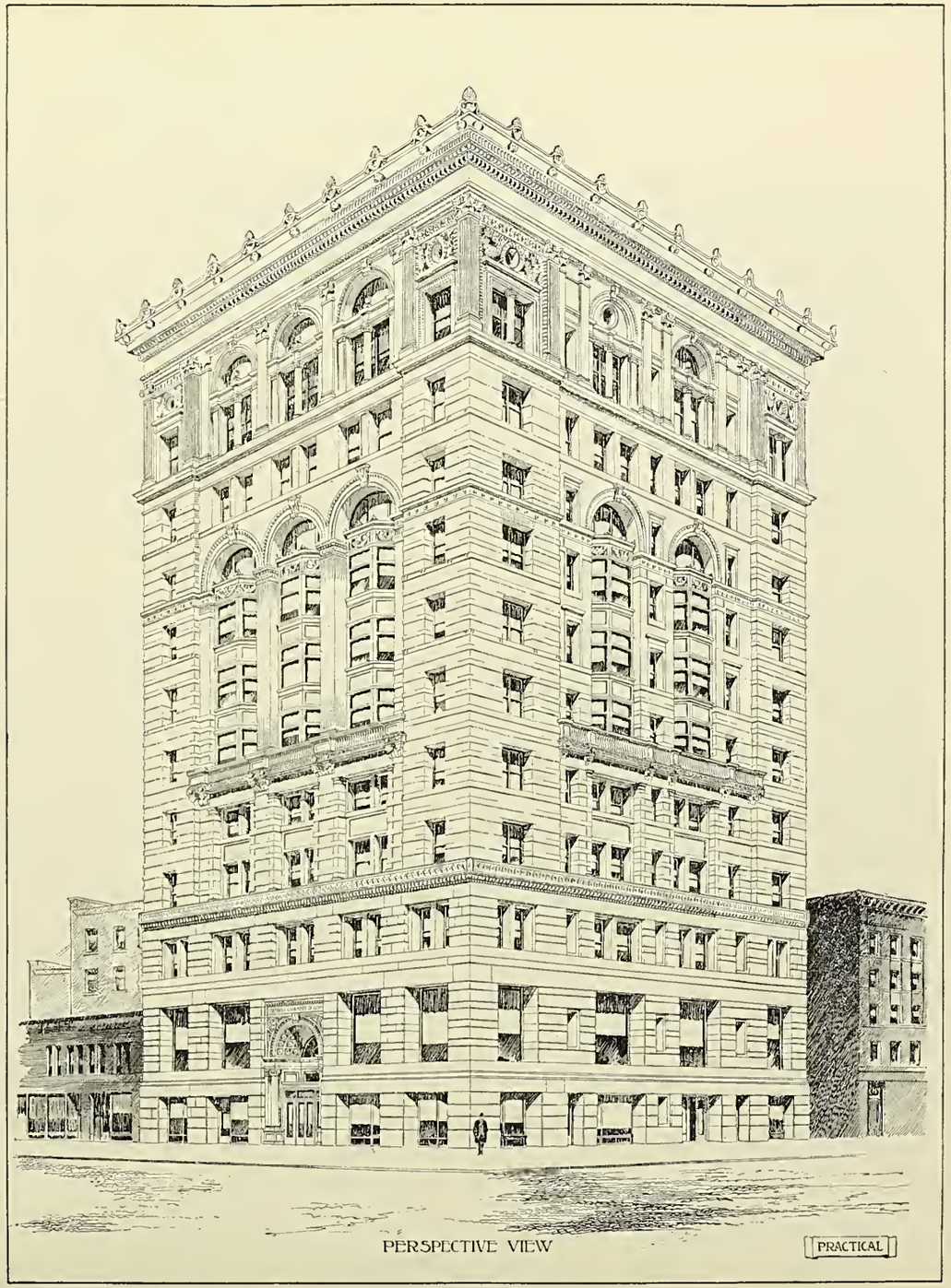




ELEVENTH OR BOARD FLOOR PLAN



SECOND FLOOR PLAN



COMPETITIVE DESIGN FOR DETROIT CHAMBER OF COMMERCE.

SUBMITTED BY MASON & RICE, ARCHITECTS, DETROIT, MICHIGAN.



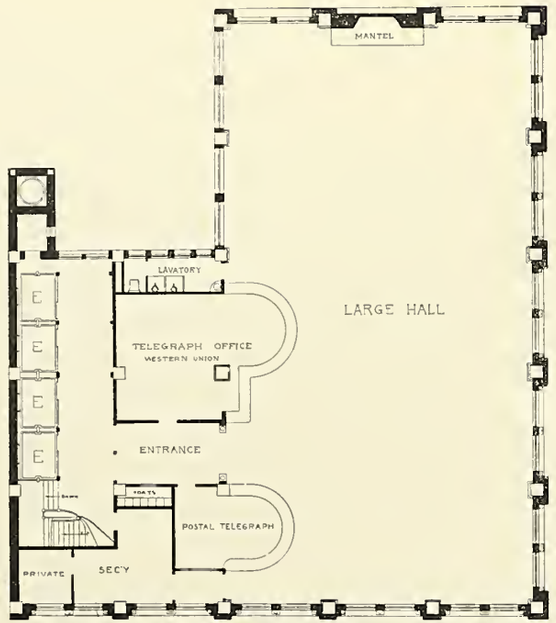
SO-CALLED HOUSE OF HENRY IV, AT NE'RAC.

Rendering by E. C. Jensen, Chicago, from Photograph.

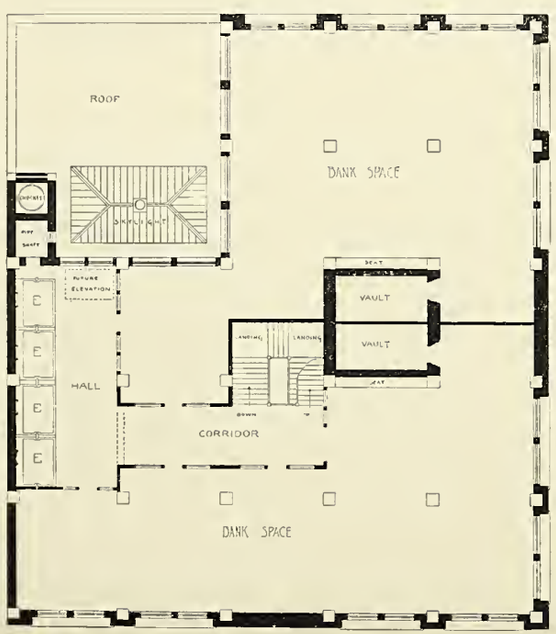


ACCEPTED DESIGN FOR CHAMBER OF

SPIER & RO



TWELFTH STORY PLAN

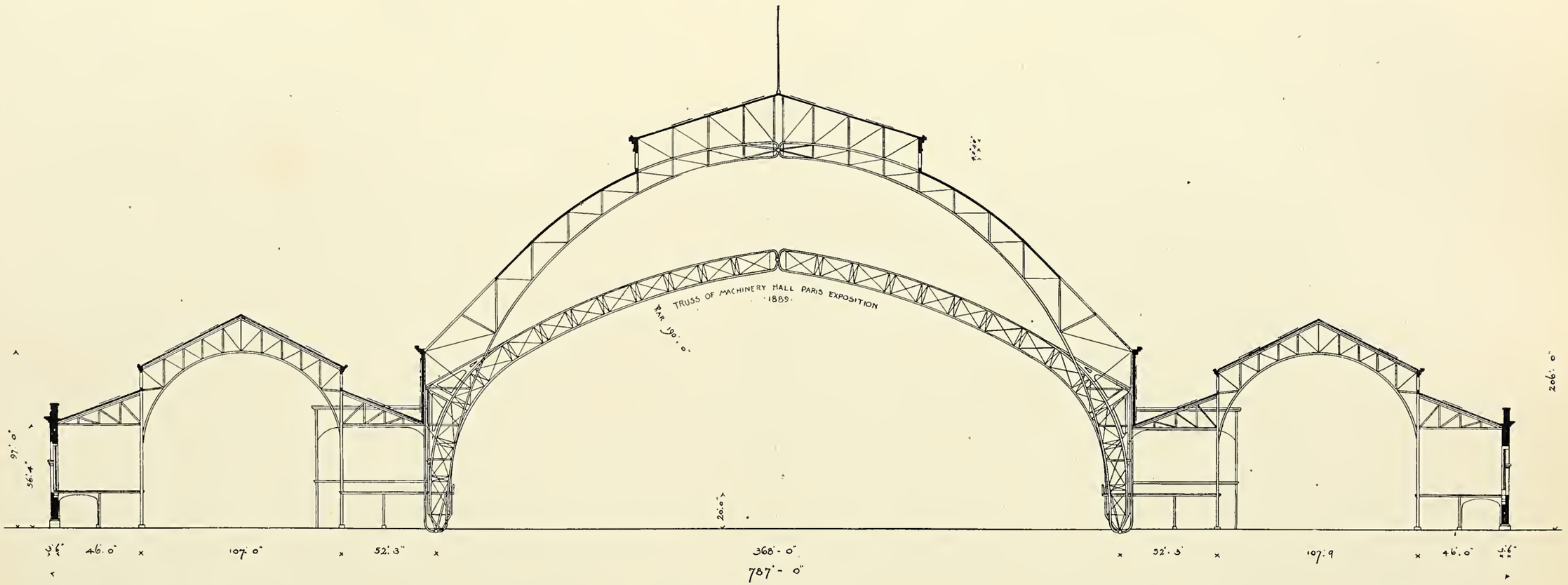


SECOND STORY—UNDIVIDED

DETROIT CHAMBER OF COMMERCE NO2



MALCOMSON AND HIGGINBOTHAM
—ARCHITECTS—

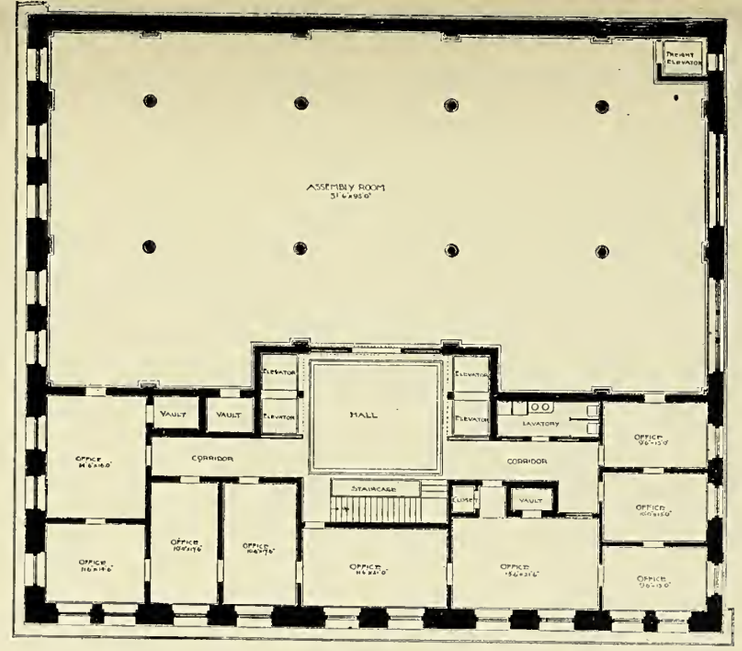


CROSS SECTION
OF THE
MANUFACTURES AND LIBERAL ARTS BUILDING

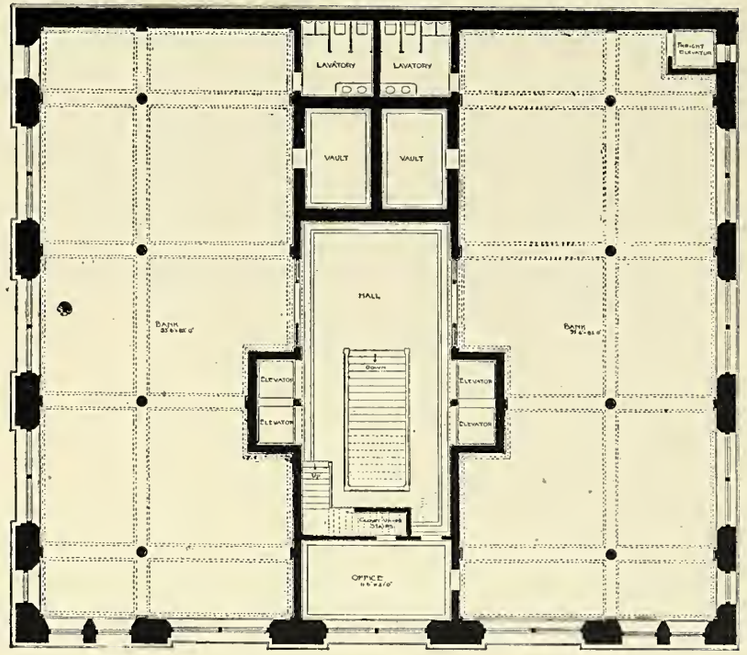
COMPARING TRUSS OF MACHINERY HALL
PARIS EXPOSITION 1889

WORLD'S COLUMBIAN EXPOSITION
CHICAGO 1893





THIRD FLOOR



SECOND FLOOR

COMPETITIVE DESIGN, DETROIT CHAMBER OF COMMERCE COMPETITION.

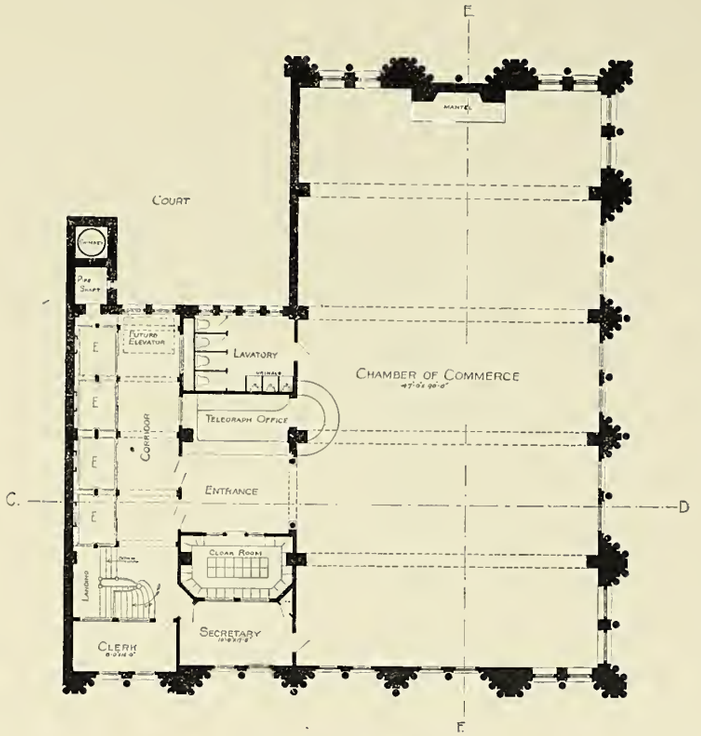
SUBMITTED BY ROGERS & MCFARLANE, DETROIT.



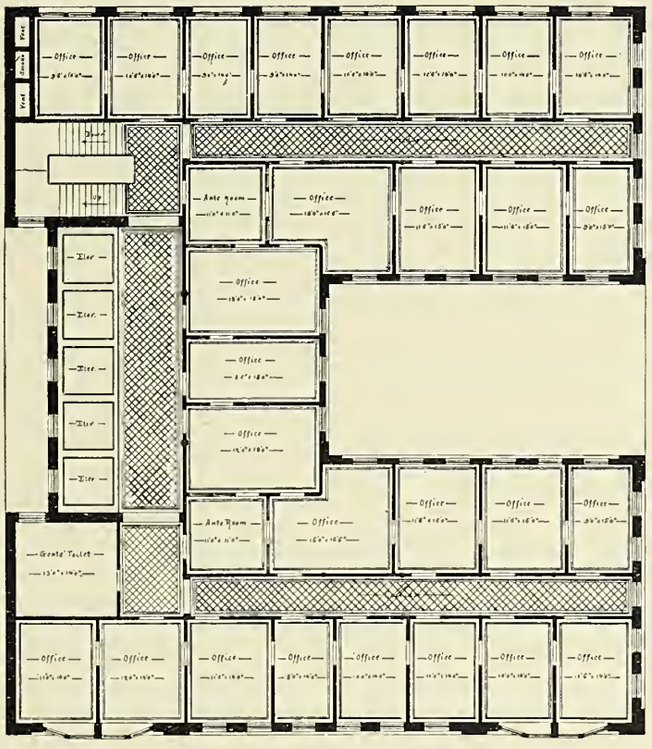
CHAMBER OF COMMERCE
DETROIT MICH.

DESIGN Nº1 SUBMITTED BY — DETROIT FIRST

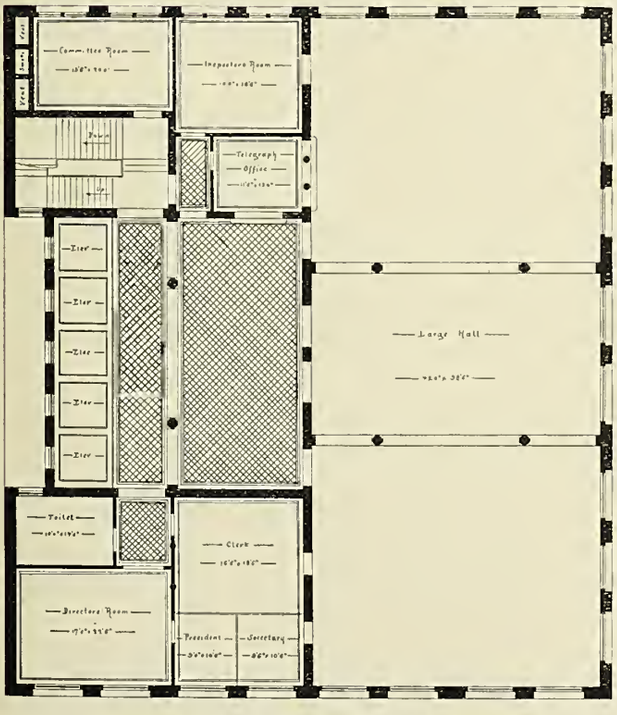
— MALCOMSON AND HIGGINBOTHAM —
— ARCHITECTS —



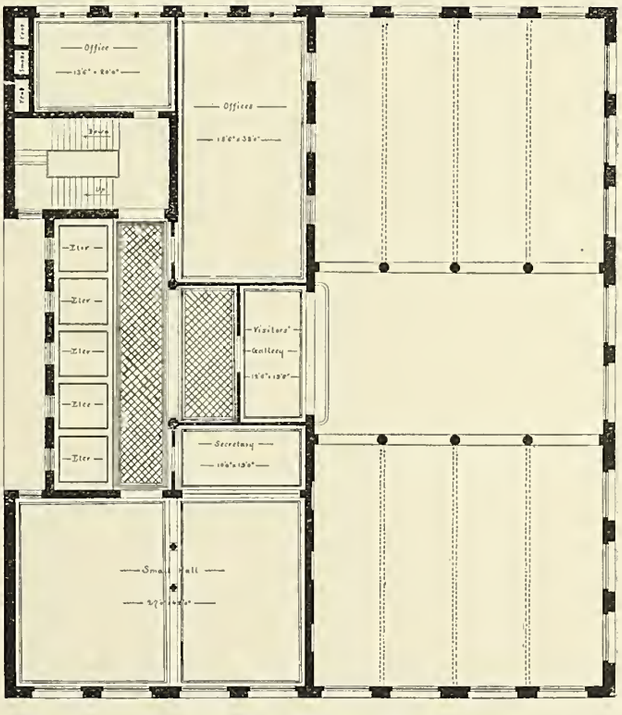
TWELFTH FLOOR PLAN.



FIFTH TO ELEVENTH STORIES.



PLAN OF SECOND STORY.



PLAN OF FOURTH STORY.

MERCE BUILDING, DETROIT, MICHIGAN.

CHITECTS.

HOT-WATER HEATING—OVERHEAD METHOD.

PLATE I.

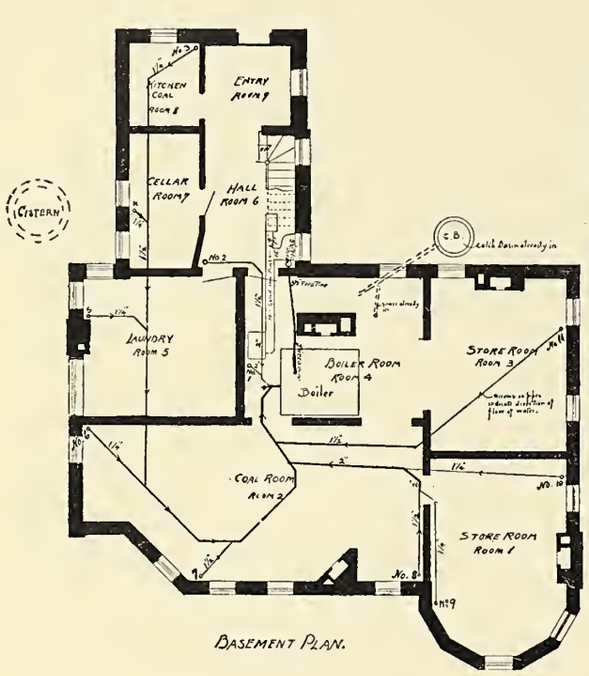
RESIDENCE FOR E. A. WIKSTROM MOMENCE ILL.

SHEET No. 19

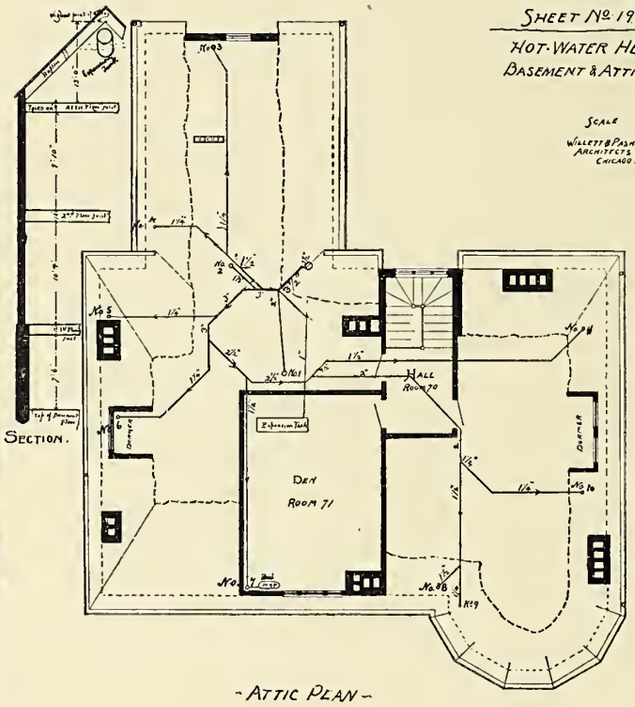
HOT-WATER HEATING BASEMENT & ATTIC PLAN

SCALE

WILLETT & PASHLEY ARCHITECTS CHICAGO ILL.



BASEMENT PLAN.



ATTIC PLAN

PLATE II.

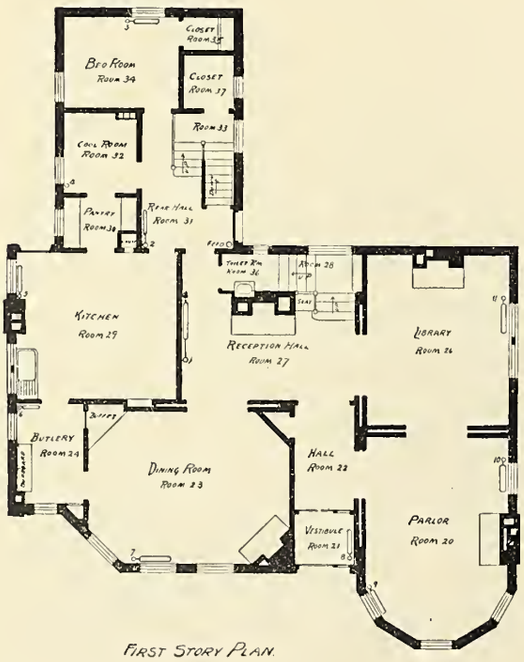
RESIDENCE FOR E. A. WIKSTROM MOMENCE ILL.

SHEET No. 25

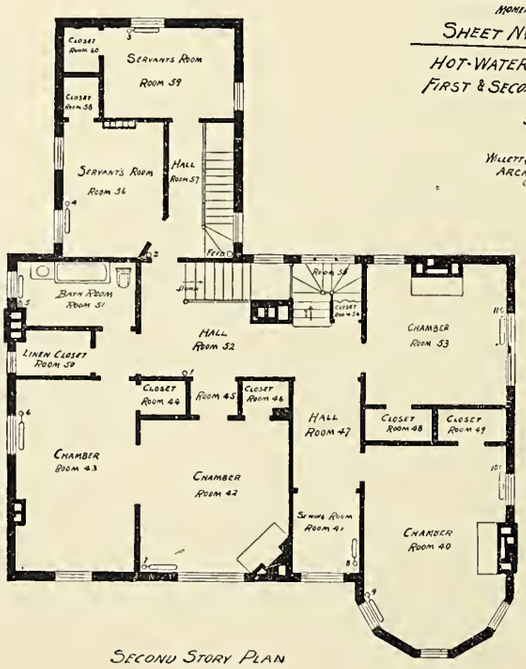
HOT-WATER HEATING FIRST & SECOND STORY PLANS

SCALE, ⅛"=1'-0"

WILLETT & PASHLEY ARCHITECTS CHICAGO ILL.



FIRST STORY PLAN.



SECOND STORY PLAN

HOT-WATER HEATING—OVERHEAD METHOD.

PLATE IV.

RESIDENCE
FOR
FRANK HAMILTON
S.W. COR. 2ND AND PINE STREET
MOMENCE ILL.

SHEET No. 15

BASEMENT AND ATTIC
PLANS SHOWING
HOT-WATER HEATING

SCALE 1/8" = 1'-0"

WILLETT & PASHLEY
ARCHITECTS
CHICAGO ILL.

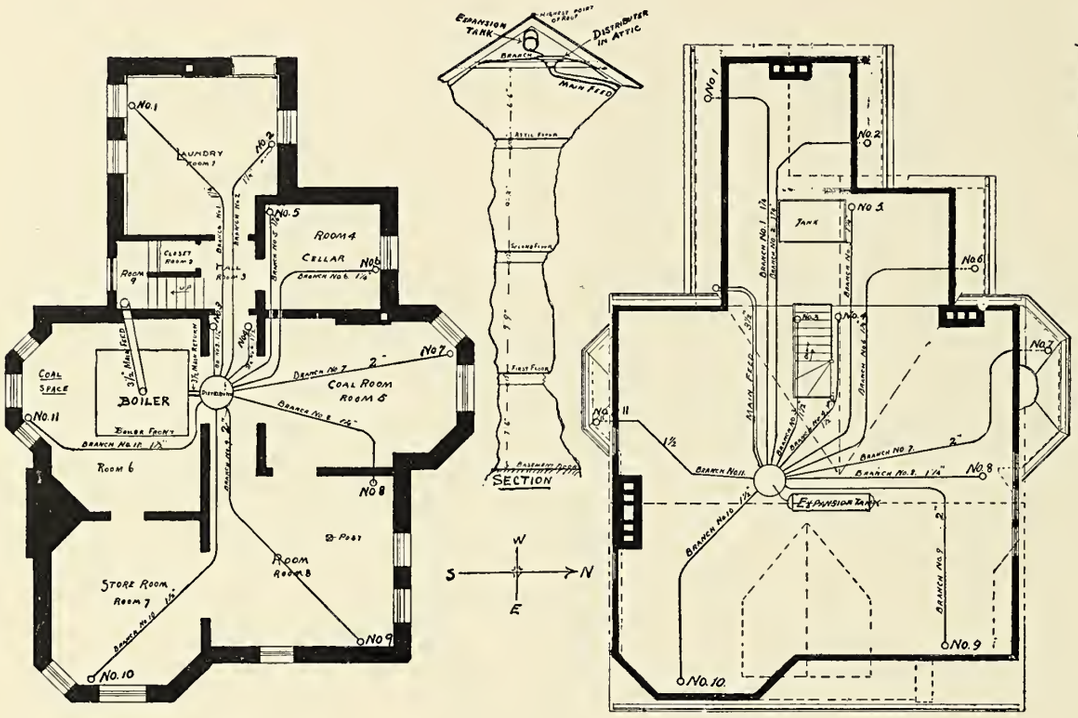


PLATE V.

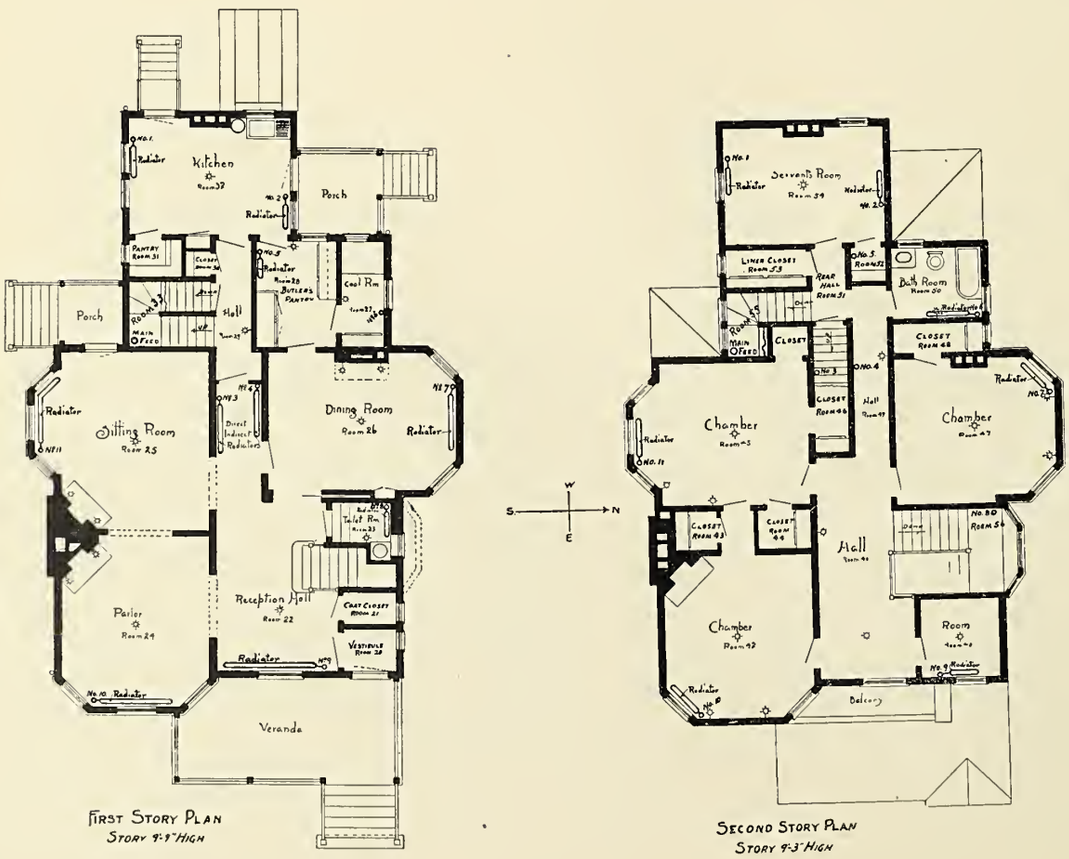
RESIDENCE
FOR
MR FRANK HAMILTON
S.W. COR. 2ND AND PINE STREET
MOMENCE ILL.

SHEET No. 16

FIRST AND SECOND STORY
PLANS.
SHOWING HOT-WATER HEATING

SCALE 1/8" = 1'-0"

WILLETT & PASHLEY
ARCHITECTS
CHICAGO ILL.



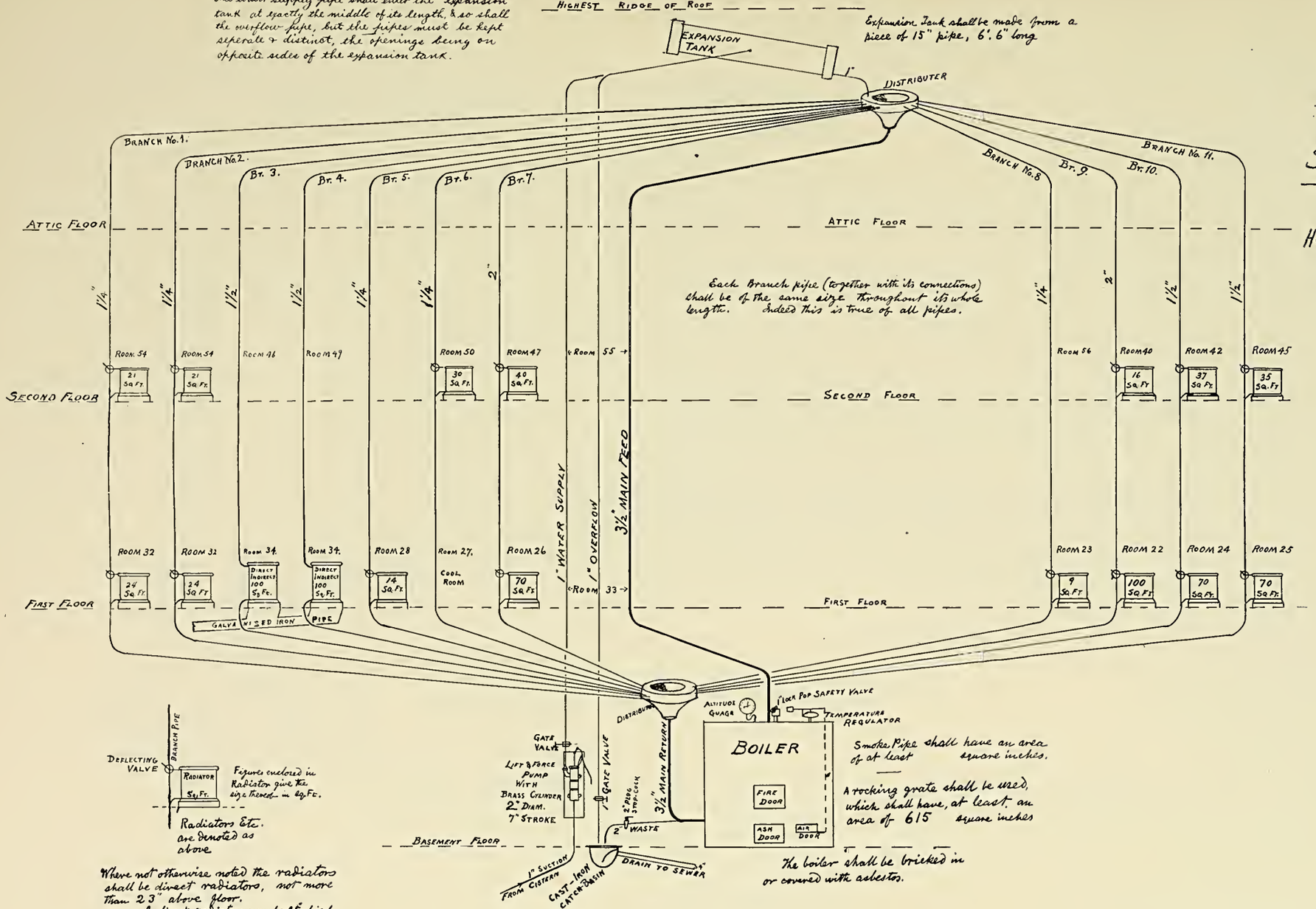
FIRST STORY PLAN
STORY 9'-9" HIGH

SECOND STORY PLAN
STORY 9'-3" HIGH

HOT-WATER HEATING—OVERHEAD METHOD.

PLATE VI.

The water supply pipe shall enter the expansion tank at exactly the middle of its length, & so shall the overflow pipe, but the pipes must be kept seperate & distinct, the openings being on opposite sides of the expansion tank.



Where not otherwise noted the radiators shall be direct radiators, not more than 23" above floor.
Indirect radiators may be 45" high

Smoke Pipe shall have an area of at least ____ square inches.

A rocking grate shall be used, which shall have, at least, an area of 615 square inches

The boiler shall be bricked in or covered with asbestos.

RESIDENCE
FOR
FRANK HAMILTON
S.W. COR 2ND AND PINE STREET
MOMENCE ILL.

SHEET No. 14.

ELEVATION OF HOT-WATER HEATING APPARATUS

NO SCALE.

WILLETT & PASHLEY
ARCHITECTS
CHICAGO ILL.

HOT-WATER HEATING—OVERHEAD METHOD.

PLATE IV.

RESIDENCE
FOR
FRANK HAMILTON
S.W.COR. 2ND AND PINE STREET
MOMENCE ILL.

SHEET No 15

BASEMENT AND ATTIC
PLANS SHOWING
HOT-WATER HEATING

SCALE 1/8"=1'-0"

WILLETT & PASHLEY
ARCHITECTS
CHICAGO ILL.

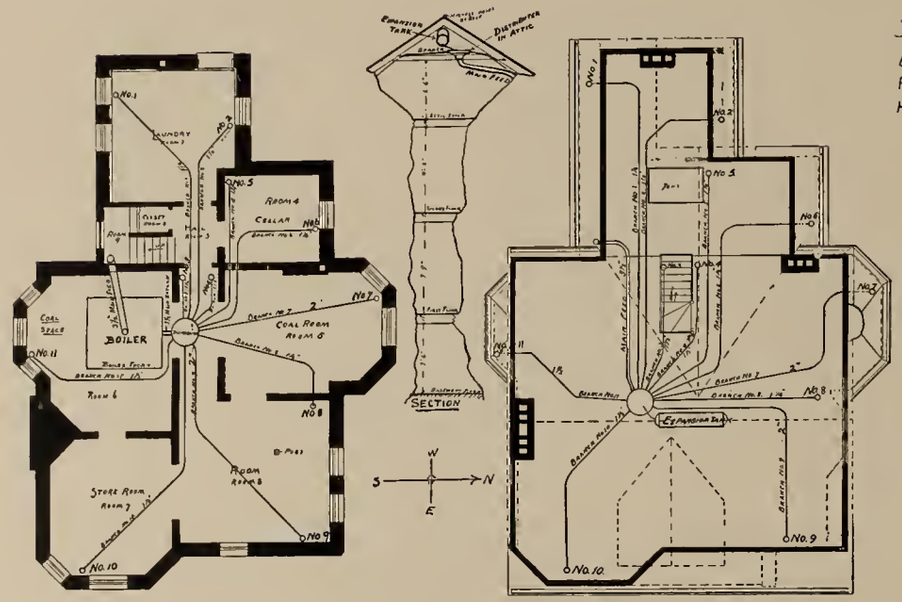


PLATE V.

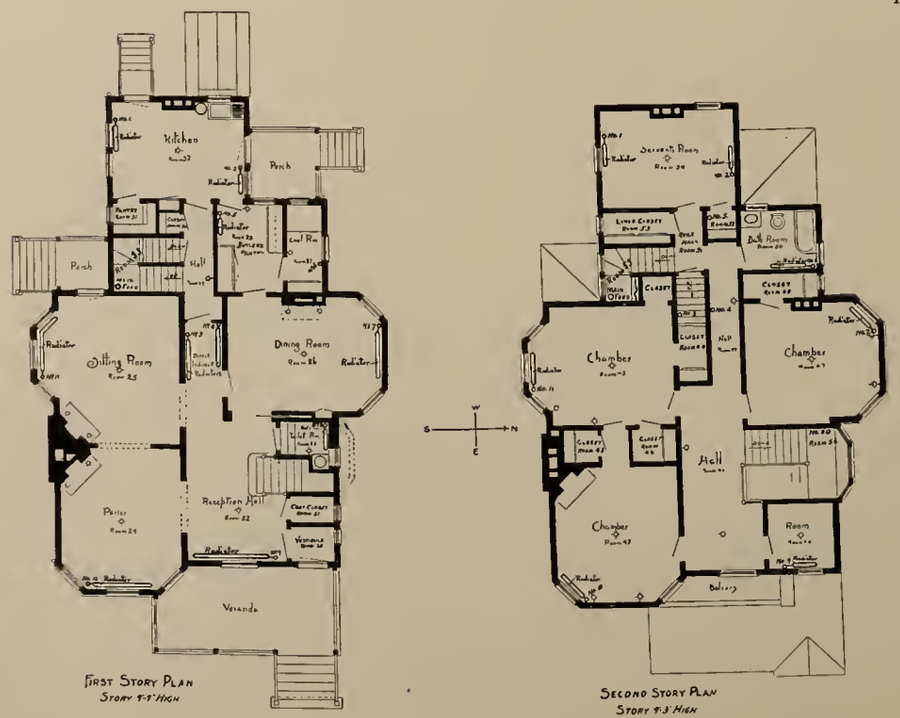
RESIDENCE
FOR
MR FRANK HAMILTON
S.W. COR. 2ND AND PINE STREET
MOMENCE ILL

SHEET No 16

FIRST AND SECOND STORY
PLANS.
SHOWING HOT-WATER HEATING

SCALE 1/8"=1'-0"

WILLETT & PASHLEY
ARCHITECTS
CHICAGO ILL



FIRST STORY PLAN
STORY 9'-5" HIGH

SECOND STORY PLAN
STORY 9'-3 HIGH

PLATE VI.

RESIDENCE
FOR
FRANK HAMILTON
S.W.COR. 2ND AND PINE STREET
MOMENCE ILL.

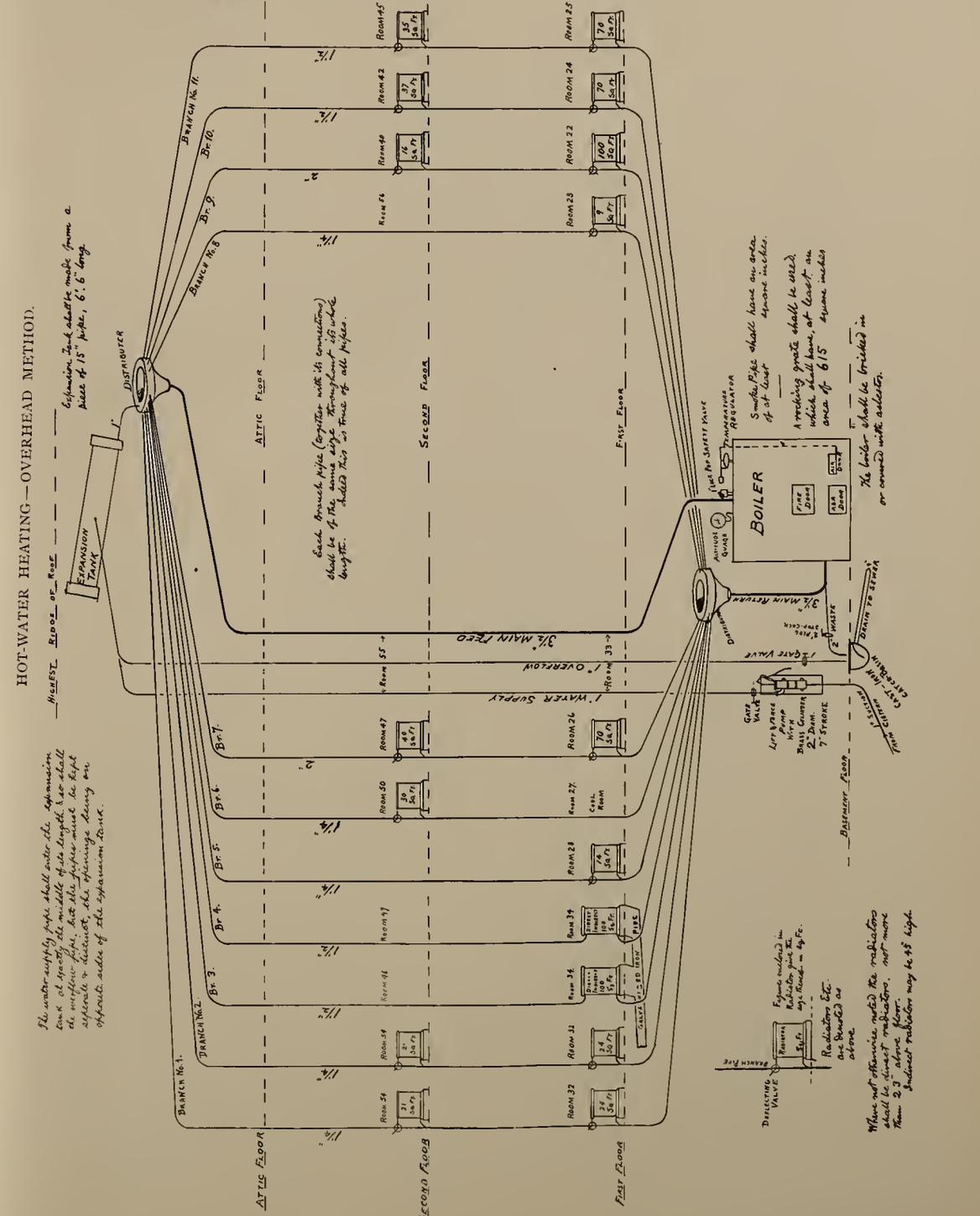
SHEET No 14.

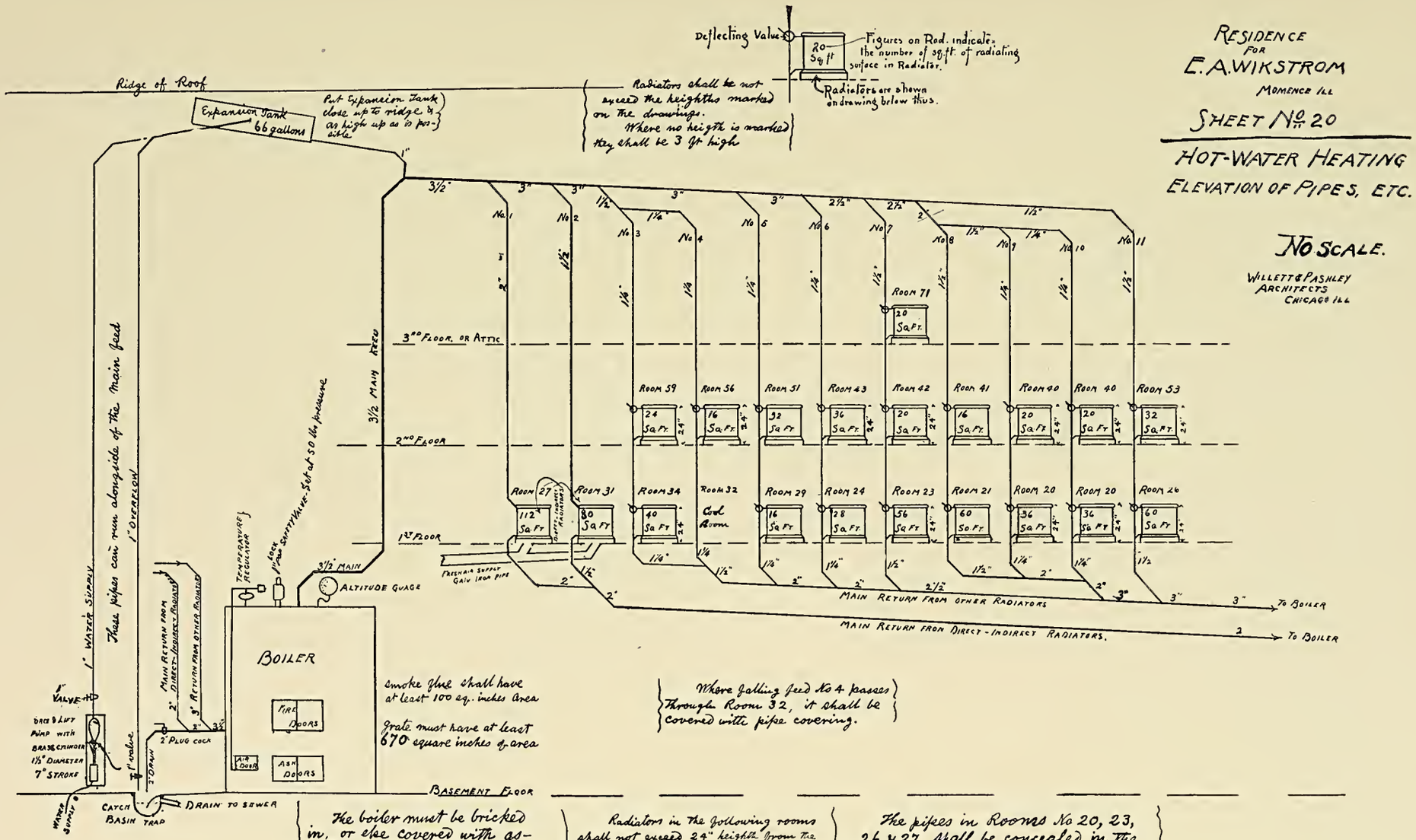
ELEVATION OF
HOT-WATER HEATING
APPARATUS

NO SCALE.

WILLETT & PASHLEY
ARCHITECTS
CHICAGO ILL.

HOT-WATER HEATING—OVERHEAD METHOD.





RESIDENCE FOR E. A. WIKSTROM MOMENCE ILL

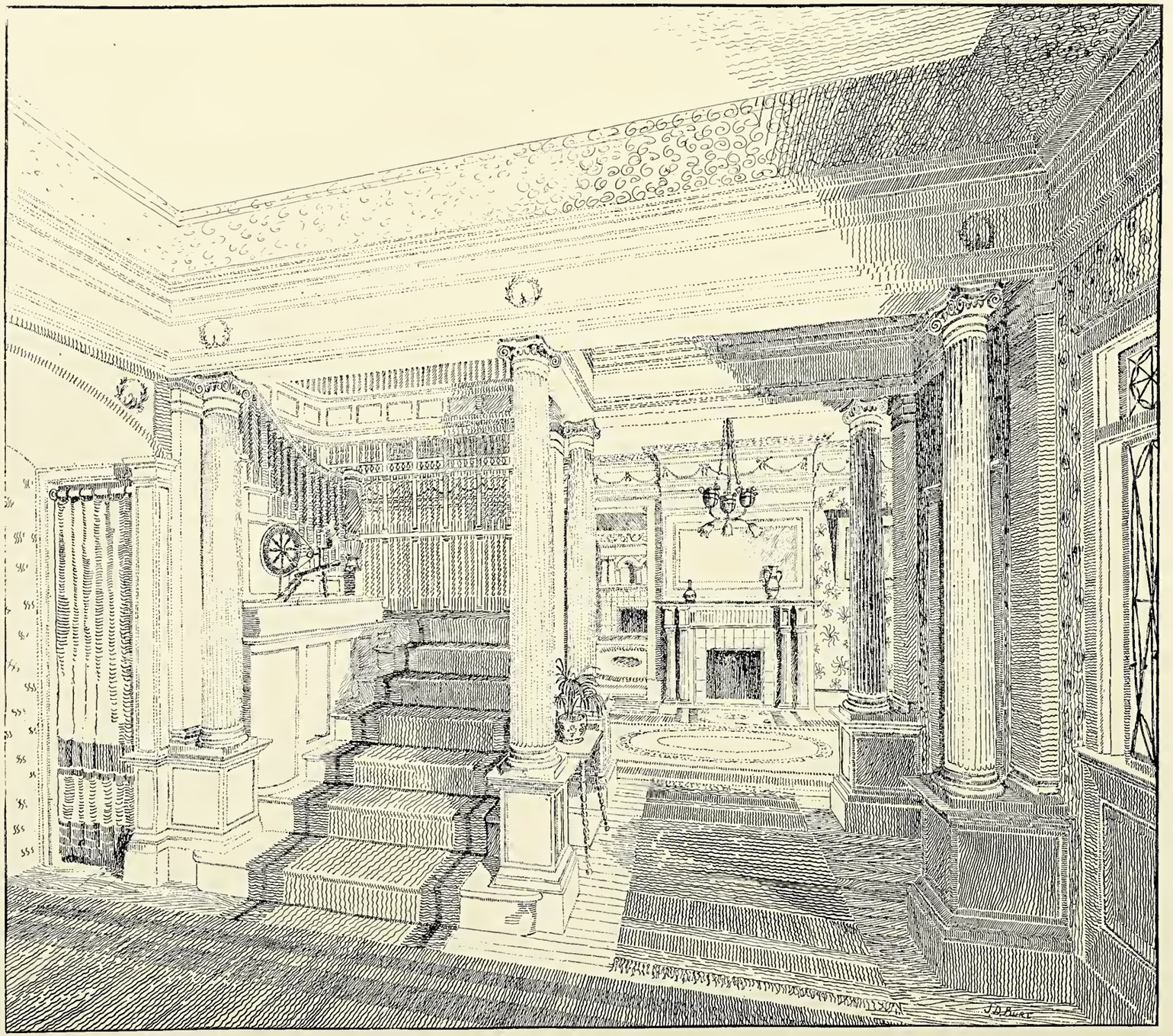
SHEET No. 20

HOT-WATER HEATING

ELEVATION OF PIPES, ETC.

NO SCALE.

WILLETT & PASHLEY ARCHITECTS CHICAGO ILL



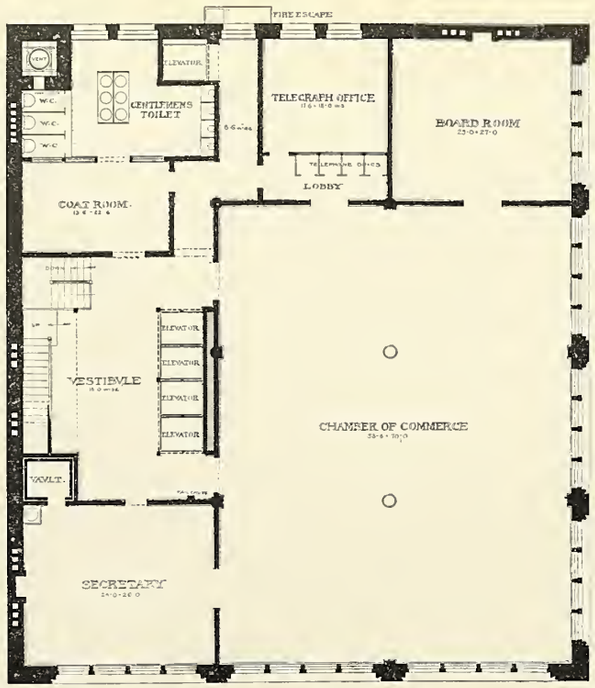
INTERIOR VIEW IN REMODELED RESIDENCE FOR ELISHA GRAY, HIGHLAND PARK, ILLINOIS.

PAUL STARRETT AND JULES F. WEGMAN, ARCHITECTS, CHICAGO.

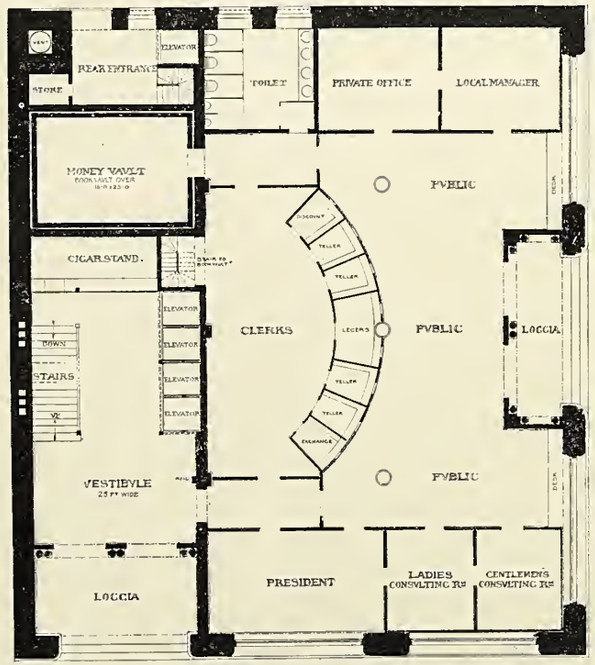


REMODELED RESIDENCE FOR ELISHA GRAY, HIGHLAND PARK, ILLINOIS.

PAUL STARRETT AND JULES F. WEGMAN, ARCHITECTS, CHICAGO.



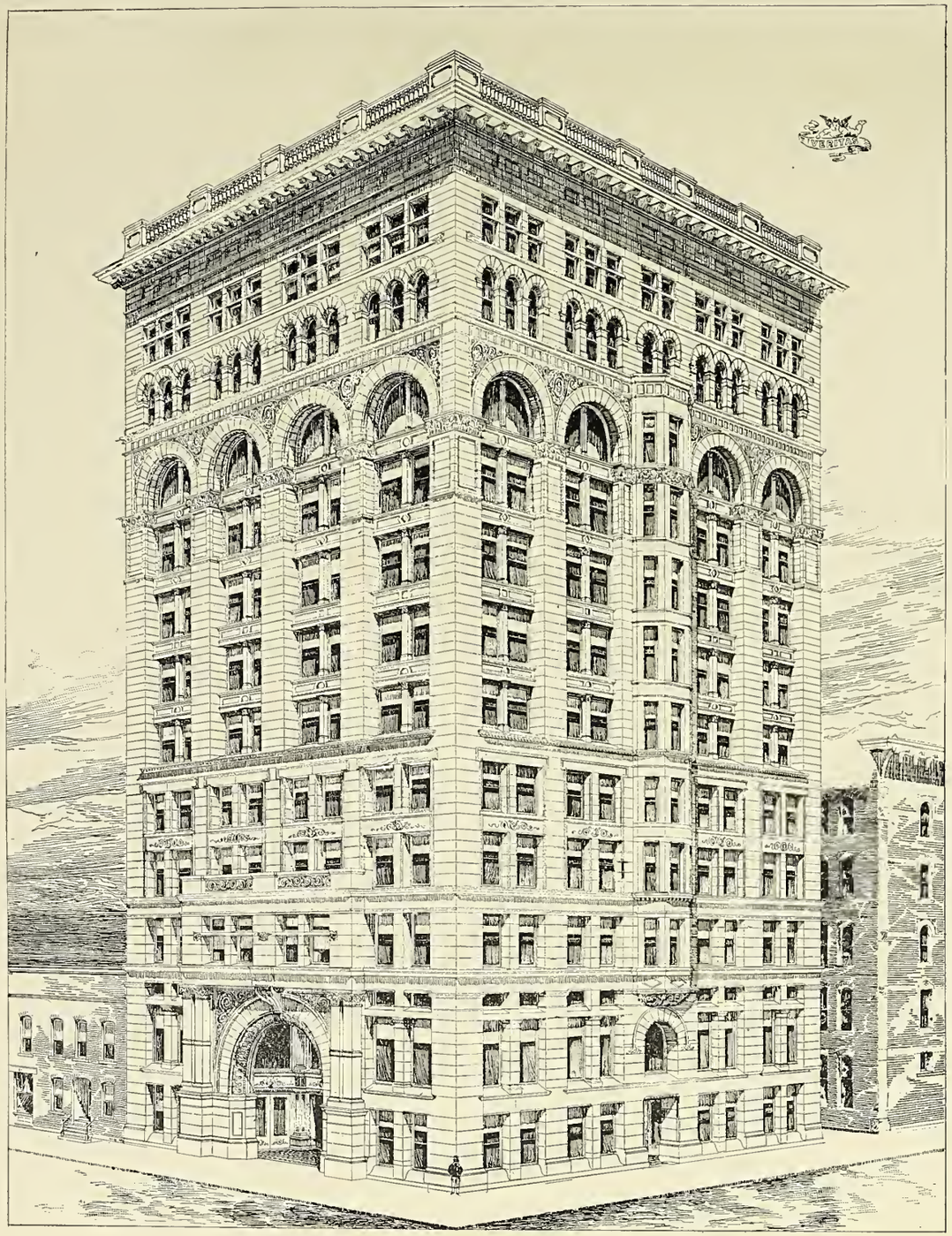
EIGHTH FLOOR PLAN



GRISWOLD STREET

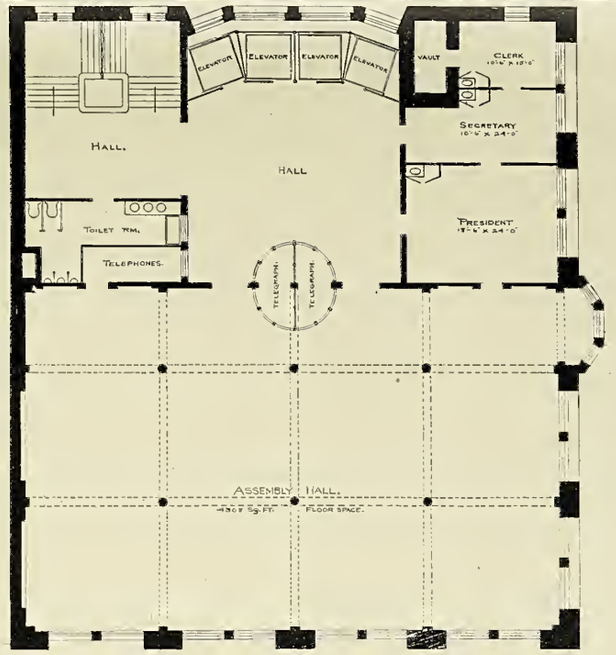
FIRST FLOOR PLAN



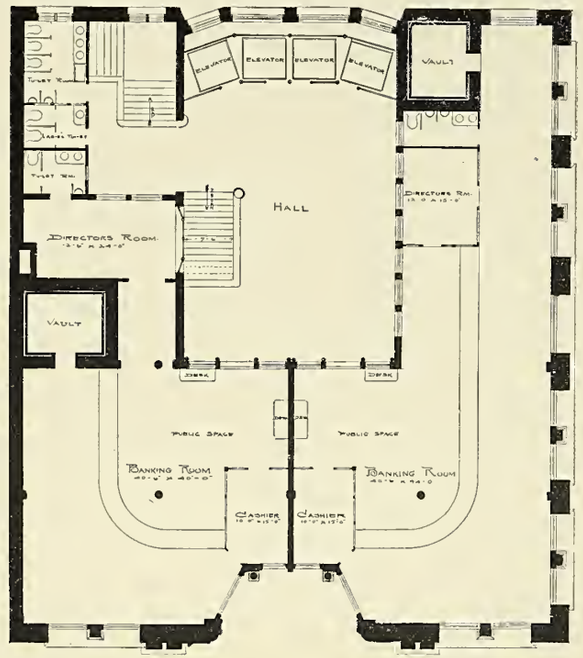


COMPETITIVE DESIGN
FOR THE DETROIT CHAMBER OF COMMERCE
HONORABLE MENTION

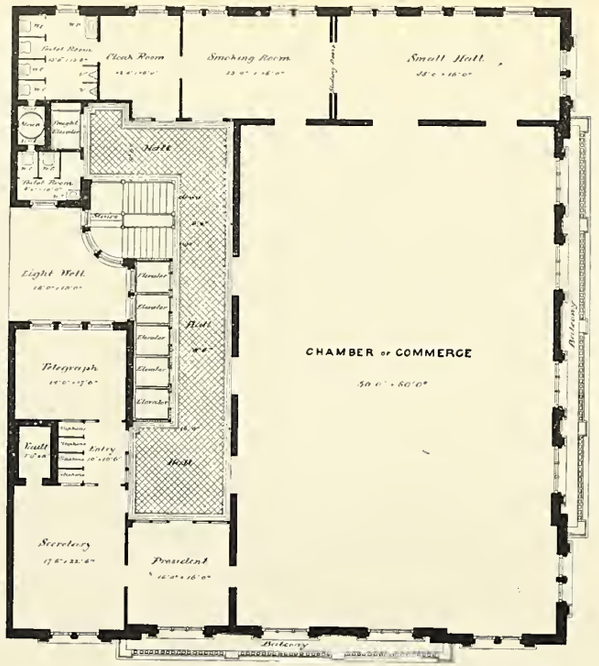
WM. S. JOY ARCHITECT



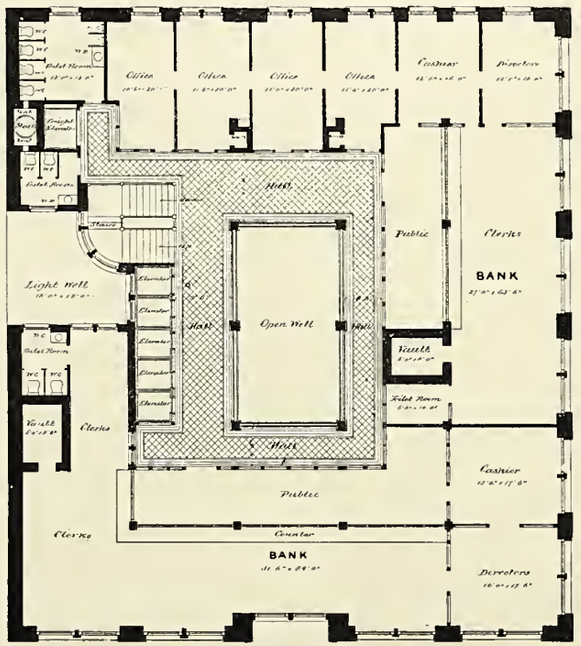
PLAN OF NINTH FLOOR



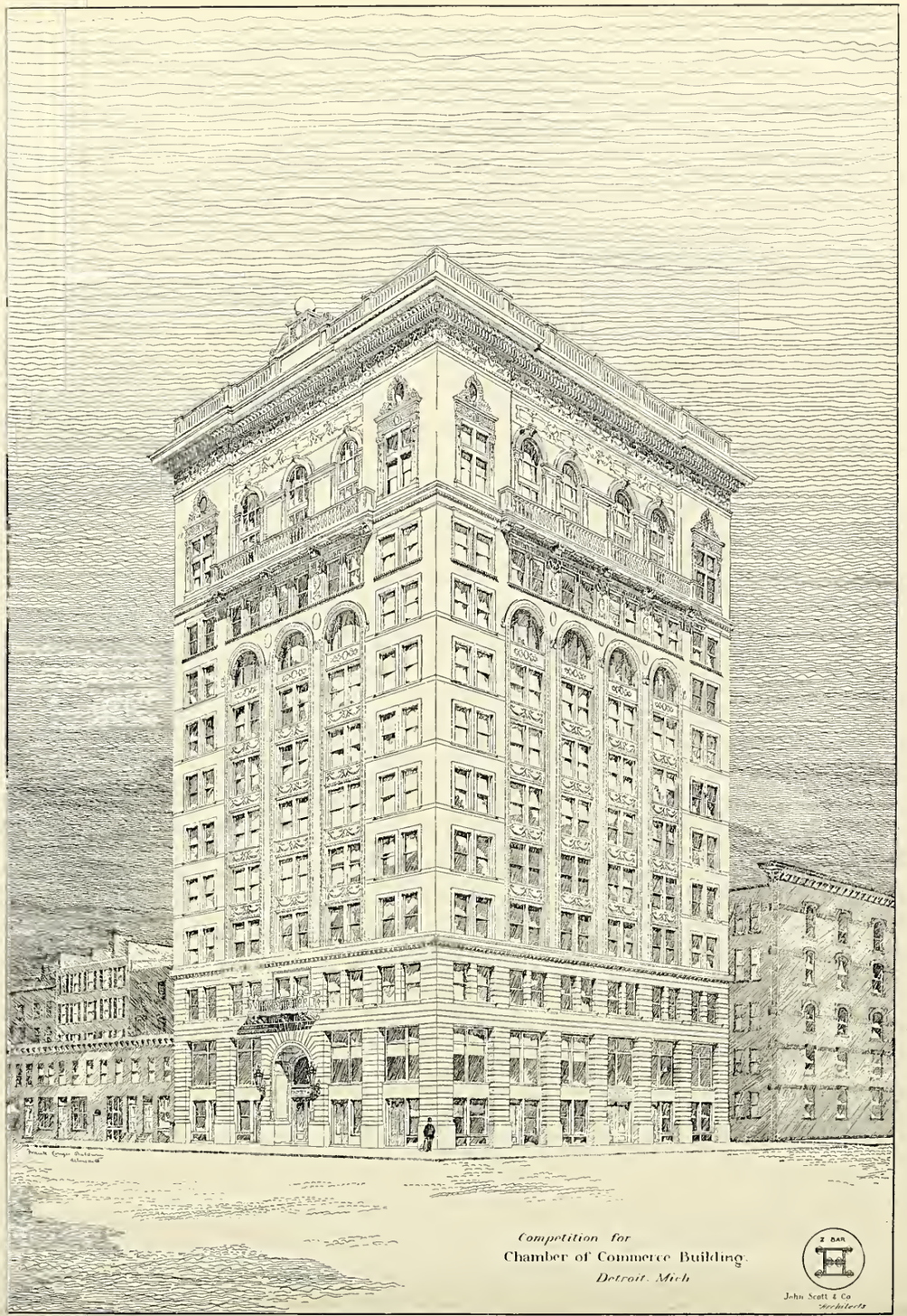
SECOND FLOOR PLAN.

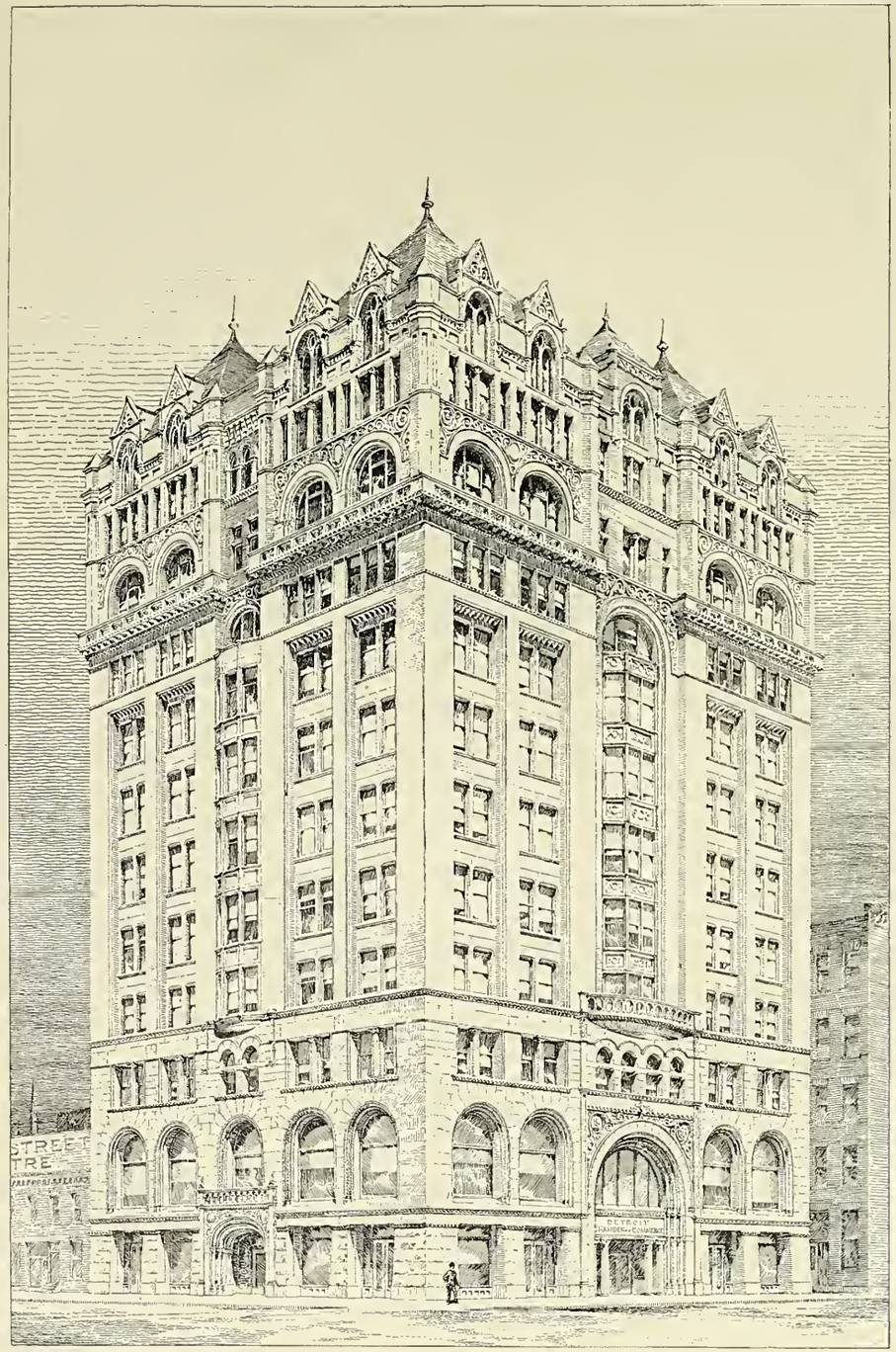


PLAN OF TENTH STORY.



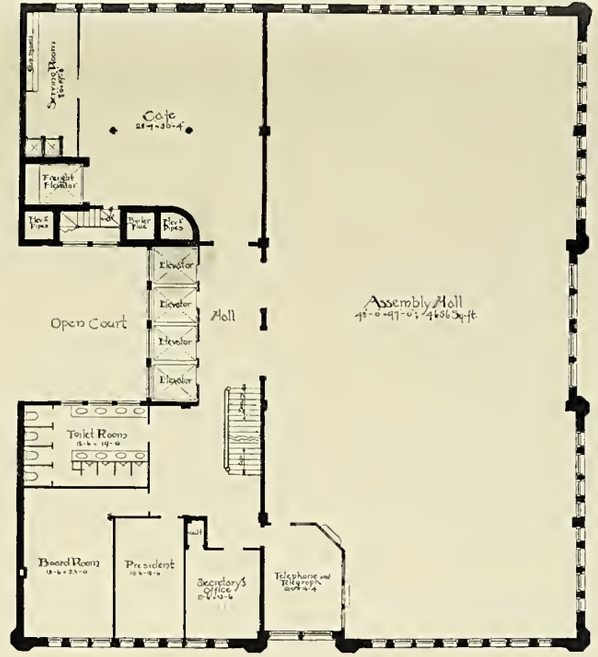
PLAN OF FIRST STORY



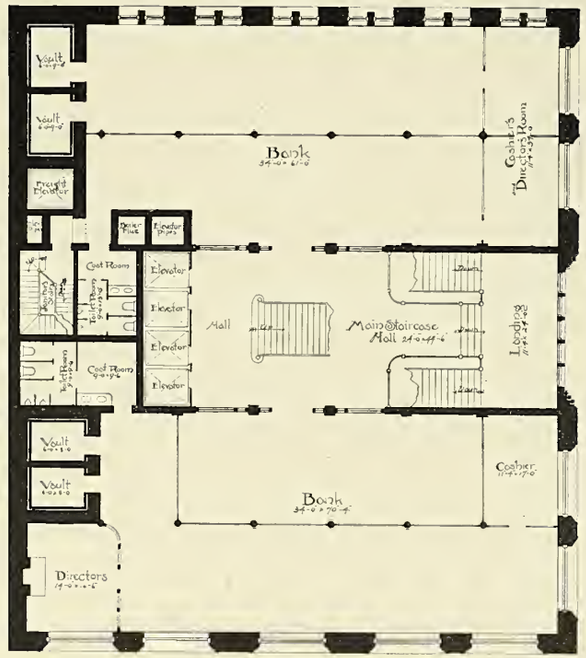


MORTIMER L. SMITH & SON.
ARCHITECTS
DETROIT, MICH.

COMPETITIVE DESIGN
FOR
DETROIT CHAMBER OF COMMERCE



TENTH FLOOR PLAN



FIRST or BANK FLOOR

THE INLAND ARCHITECT AND NEWS RECORD

Vol. XXI. JUNE, 1893. No. 5



A Monthly Journal Devoted to

ARCHITECTURE,

CONSTRUCTION, DECORATION AND FURNISHING

IN THE WEST.

PUBLISHED BY THE INLAND PUBLISHING CO.,
19 Tribune Building, Chicago, Ill.

L. MULLER, Jr., Manager. ROBERT CRAIK McLEAN, Editor.
C. E. ILLSLEY, Associate Editor.

SPECIAL CONTRIBUTORS:

DANKMAR ADLER,	D. H. BURNHAM,	W. L. B. JENNEY,
HENRY VAN BRUNT,	P. B. WIGHT,	IRVING K. POND,
WM. PAUL GERHARD,	LOUIS H. SULLIVAN,	ALLEN B. POND.

TERMS: Regnlar number, $5 a year; Photogravure edition, $10 a year. Single copies, Regnlar number, 50c.; Photogravnre edition (including 7 photogravures), $1. Advance payment reqnired.

The colnmns and illnstration pages of THE INLAND ARCHITECT are open to all alike, merit and availability only determining what shall be published. Contribntions appropriate to its pages are always desired.

AMERICAN INSTITUTE OF ARCHITECTS.

OFFICERS FOR 1893:

PRESIDENT . . . . EDWARD H. KENDALL, New York, N. Y.
SECRETARY . . . . ALFRED STONE, Providence, R. I.
TREASURER . . . . SAMUEL A. TREAT, Chicago, Ill.

VICE-PRESIDENTS:

FIRST VICE-PRESIDENT . . DANIEL H. BURNHAM, Chicago, Ill.
SECOND VICE-PRESIDENT . HENRY VAN BRUNT, Kansas City, Mo.

BOARD OF DIRECTORS:

For three years.

Theophilus P. Chandler, Jr., Phila., Pa.	Joseph F. Banmann, Knoxville, Tenn.
George W. Rapp, Cincinnati, Ohio.	P. P. Furber, St. Louis, Mo.
William G. Preston, Boston, Mass.	R. W. Gibson, New York, N. Y.
*W. W. Clay, Chicago, Ill.	C. H. Johnson, St. Paul, Minn.

For two years.

*Richard M. Hnnt, New York, N. Y.	C. F. McKim, New York, N. Y.
E. M. Wheelwright, Boston, Mass.	William Worth Carlin, Buffalo, N. Y.
*James W. McLanghlin, Cincinnati, O.	S. S. Beman, Chicago, Ill.
William S. Eames, St. Lonis, Mo.	William C. Smith, Nashville, Tenn.

For one year.

W. M. Poindexter, Washington, D. C.	*George B. Ferry, Milwaukee, Wis.
C. J. Clark, Lonisville, Ky.	George C. Mason, Jr., Philadelphia.
Levi T. Scofield, Cleveland, Ohio.	E. F. Fassett, Portland, Me.
M. J. Dimmock, Richmond, Va.	A. W. Longfellow, Boston, Mass.

*These, with President, Secretary and Treasurer ex-officio, form Executive Committee.

STANDING COMMITTEES FOR 1893:

Committee on Foreign Correspondence.—Richard M. Hnnt, chairman, New York, N. Y.; William Le Baron Jenney, Chicago, Ill.; R. S. Peabody, Boston, Mass.; C. F. McKim, New York, N. Y.; Henry Van Brunt, Kansas City, Mo.

Committee on Education.—Henry Van Brunt, chairman, Kansas City, Mo.; Professor William R. Ware, New York, N. Y.; Professor N. Clifford Ricker, Champaign, Ill.; A. W. Longfellow, Boston, Mass.; Theophilns P. Chandler, Jr., Philadelphia, Pa.

Committee on Uniform Contract.—Samnel A. Treat, chairman, Chicago, Ill.; William Worth Carlin, Buffalo, N. Y.; Alfred Stone, Providence, R. I.

Committee upon Conservation of Public Buildings.—Richard Upjohn, chairman, New York, N. Y., Presidents of the several Chapters.

Committee on Competition Code.—Charles E. Illsley, chairman, St. Louis, Mo.; J. W. Yost, Columbns, Ohio; J. G. Cutler, Rochester, N. Y.

Place of next Convention, Chicago, August, 1893.

The World's Fair an Architectural Study.

To the architect whose visit to the Columbian Exposition is made with a view to study design and construction the buildings now in their completed state will not only be interesting, but present the demonstration of many problems that have never been met with in his practice. In the main, the ordinary treatment in structure and design obtain, but there are enough digressions to occupy weeks of time in examination and study. The quality and the adaptability of the "staff" covering and its application at once to broad plane surfaces and the most intricate ornament and to sculpture, the grouping of the several buildings and even the effect of polychromatic treatment of a façade, all will give to the thoughtful student a field of investigation that is almost limitless. Many governments have recognized this and have presented requests for detail plans and photographs. The Royal Institute of British Architects have given to the Godwin Bursar of this year, Mr. Bannister F. Fletcher, the task of reporting upon the construction, and as a result the Institute will receive much interesting data, a set of tracings from the working drawings, and it is probable this will be supplemented by a full set of photographs for its library. The Director of Works has placed the entire construction office at the disposal of the Royal Institute's representative, and as that gentleman, not only by his credentials but in his personality, has won the favor and coöperation of those with whom he has come in contact, his report from an architectural standpoint will repay the Institute many times for his mission. While Mr. Fletcher is the only architect sent to the Fair thus far by a foreign society for the purpose of collecting data, the sultan of Turkey, the German government and others have, through their commissioners, expressed a wish for similar data. But it is to the individual architect who attends the Fair and makes a stay of sufficient length to study the problems that most interest him that the greatest benefit will accrue, for he can photograph and sketch design, ornament and construction, and find a solution to almost every problem where large masses, grouping and landscape effects are the main features.

The "Ford's Theater" Disaster at Washington.

The attitude of the United States government in its relation to public buildings has received a most pointed and forcible illustration in the recent wrecking of "Ford's Theater," in Washington. Here was a building that was used as a theater before the Civil War and since occupied as a government bureau. Its unsoundness was a matter of common remark. Congress would not appropriate money for a new building and condemn the old, because there were other appropriations that meant influence and votes, while no one in Washington was interested except employés who knew that to complain would mean discharge, and who each day believed that they were taking their lives in their hands when they entered the structure. The supervising architect "could only make recommendations," congress alone could act. It is also probable that the inspections which it is claimed have been made were also political ones, made by men who were political appointees. In fact, the rottenness of the whole system of government supervision of building stands out in all

its glaring incompetency in the light of this awful affair. But all the unsafe buildings under government control are not in Washington. Two years ago the supervising architect reported the postoffice at Chicago as unsafe. As not less than twelve years ago the writer thrust a cane its full length into a crack in that structure, and disruption has continued ever since, such a verdict is not surprising. But congress still ignores the great danger both employés and public constantly incur in the second largest postoffice in the country, just as it has ignored the dangerous condition of "Ford's Theater," and will probably wait for some such calamity to call its attention and force its action. We do not claim that this occurrence is in any way due to the supervising architect's office, but we do claim that it is due to the system under which the government erects and supervises its buildings, and hope that the results of the inquest upon the victims of this disaster will call attention to the statements made by the house committee on buildings and grounds of the last congress in relation to the office of the supervising architect, so that the next congress will pass a suitable bill for its reorganization.

Registration called for in America and England.

It is hoped that those who have labored for the passage of an architects' registration bill in the several states will not lose interest because of the outcome of the efforts put forth in the state of New York, and which were defeated by a politician who happened to be governor, possessed of the power to veto. In England the profession is divided upon the question, the majority of the members of the Royal Institute of British Architects claiming that such action is not necessary. The argument there may be good, that the Institute in its charter and the privileges granted its members by municipal bodies is legalized sufficiently, but in this country the American Institute does not hold an equal position. Its influence is strong as an association, but the architect finds that it is of little benefit to write "F. A. I. A." after his name. In time this might be changed, but that method which will give the greatest security to public and profession alike, is the passage of legal enactments which will establish the profession as a profession, and give its members a standing legally, when now they can only establish such by individual effort, and the greater number of the competent suffer for the sins of those who may be incompetent or otherwise undeserving of the confidence of the public.

The Columbus Statue on the Chicago Lake Front.

The colossal statue of Columbus, by Kretchmar, which was recently placed upon the lake front, opposite the Auditorium, at Chicago, has excited considerable comment, and this not entirely complimentary to the sculptor or the monument committee. While that artist has exhibited a certain degree of ability heretofore, and in this statue has shown an artistic imagination that should yet bring him credit as a sculptor, the work under consideration is most unfortunate. From one point of view the pose has a certain degree of dignity, but from all others the effect is bad — very bad, even grotesque. The face is coarse, when there was a rare chance for an ideal treatment; the pose is one of surprise; the draperies are spread to a wind that seems to blow from all directions. This is from the artist's standpoint. The public view, as reflected in the newspapers, is amusing. Each writer has some humorous comparison to make, the general trend of which is that Columbus is discovering the ballet girls in Kiralfy's "America," a spectacular performance at the Auditorium, or is amazed at seeing several prominent citizens, presumably the projectors of the monument, enjoying the performance of a skirt dance in the Auditorium hotel parlors, one imaginative genius suggesting that the great navigator was in pursuit of a lake front mosquito. This failure in producing what was intended to be an historical commemoration of this Columbian year (a failure upon which both artists and public agree) is, we believe, largely due to insufficient study of the model, with too great haste in its execution. This was not necessary, for the sculptor Gelert had already modeled a Columbus that was in every way dignified and full of thoughtful energy, with a pedestal that was thoroughly studied, and this could have been erected within the same limit of cost and by a sculptor who has already won a place among those who stand first in the profession in America. Yet this model was not taken into proper consideration, if at all, and the result is a matter of regret to public and projectors alike. Great works of art cannot be designed either by the yard or the minute, and if this statue of Columbus serves no other purpose beside that of lending a point to the pencil of the paragraphist, it will be to show that rarely can an artist produce a great work with haste as a spur and an untrained imagination as a guide, and that bronze and stone perpetuate both our greatest thoughts and our greatest mistakes.

Abuse of World's Fair Sanitary Privilege.

There is one defect in the arrangements for public comfort at the Fair that requires immediate remedy, and that is in the toilet and sanitary department. In order that the apparatus might be provided for and with the least cost to the Fair, sanitary concerns were invited to present bids for the supply of all apparatus. The firm that presented the most attractive proposal agreed in substance that it would place closets and lavatories where designated by the chief of construction throughout the Fair buildings. All apparatus should be of the first class, and attendants should be furnished and the toilet rooms kept in perfect condition throughout. In consideration for this the concessioner was to be allowed to charge a small fee for the use of one-half of toilets, and though it is more than a year since we saw these articles of agreement, the impression is that each lavatory should contain both free and paid closets, and in equal proportion. Entered into in good faith by the authorities of the Fair, this firm has already abused its privilege to an extent that has brought more complaint, and with greater reason, than all other departments together. In half the buildings there are no free closets, or these are placed so remote from the main lines of travel as to be practically useless. Where there are free and paid closets together, the former are kept, and it would seem purposely, in a filthy condition, while attendants are employed who discourage their use. While the main object of this firm would seem to be the advertisement of its wares, the effect is obviously the opposite from beneficial. The Council of Administration, however, is both prompt and powerful, and it is hoped that this abuse of privilege will be at once adjusted by its abatement or the cancellation of the concession which in the hands of any of the well-known manufacturers of sanitary goods would be properly conducted, while now it acts against the best interests of the Fair.

DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE.

BY CHARLES E. ILLSLEY, A.M., C.E., ARCHITECT.

CHAPTER VI—INTRODUCTION TO CONVERGENT PERSPECTIVE.

THE methods of isometric and cabinet projection hitherto explained are invaluable for delineating constructive details to large scale, as shown by the illustrations, especially where the depth in comparison with their breadth and height is inconsiderable. Representing, as they do, at one glance, three or more sides of an object, they are far more intelligible than ordinary plans and elevations, while equally serviceable as working drawings, since they are made "to scale," and scale measurements can be taken directly from them. Moreover, they fall strictly within the standard definition of perspective, and may readily be mistaken for ordinary or convergent perspectives; yet, having no

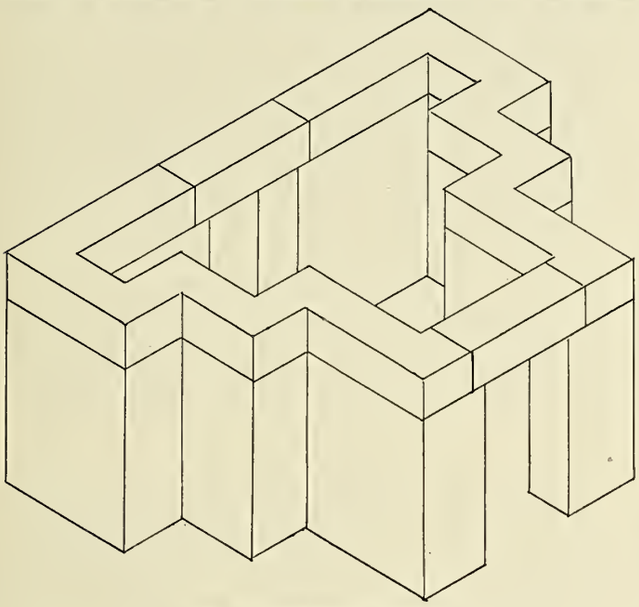


FIG. 95.—ISOMETRIC DRAWING.

vanishing points, they are constructed to scale with as great facility as any plane figure, and their general adoption for constructive details would effect quite a saving in time and labor as well as in tedious verbal explanations often completely misunderstood.

68. But where the "third dimension" becomes considerable, as with entire buildings whose receding sides may equal or exceed their fronts, these methods are less satisfactory. The parallelism

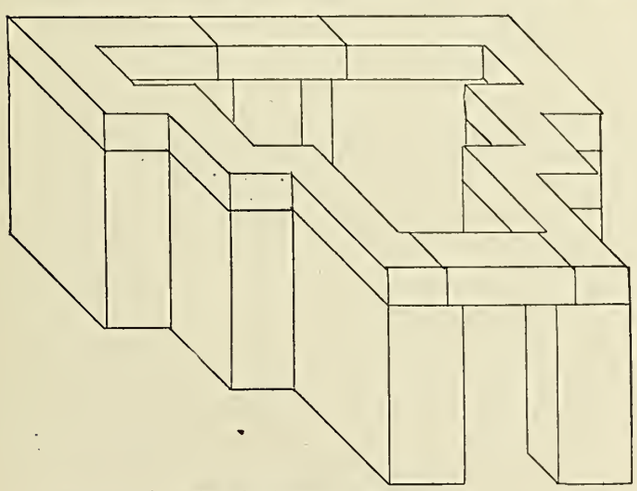


FIG. 96.—CABINET PROJECTION.

of receding lines, so picturesque for a short distance, quickly offends the eye beyond this limit, making parallel lines seem actually divergent, while a drawing which shows the remote face of an object at precisely the same size as its nearest face, becomes, when the remote face is at all distant, an anomalous distortion which is unsightly.

These remarks may be illustrated by comparing Figs. 95, 96, 97 and 98. Of these Fig. 95 is an isometric drawing of an irregular stone foundation, Fig. 96 is a cabinet projection of the same, Fig. 97 is a parallel perspective of it, and Fig. 98 represents it in oblique perspective. Each of these four drawings is made to the same scale; the differences in the results are due solely to the different methods employed.

69. For the reasons above given, we require in the delineation of entire buildings a system of drawing which shall take into

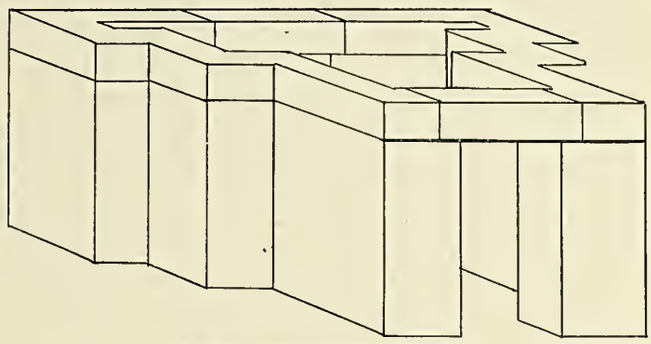


FIG. 97.—PARALLEL PERSPECTIVE.

account the apparent convergence of receding lines and the reduction in the apparent size of distant objects, a system which locates the eye not at an imaginary standpoint infinitely far away, but at a fixed and real point comparatively near the object viewed. A drawing so developed might be called *convergent* perspective, or *real* perspective, in distinction from the *quasi parallel* perspectives shown in previous chapters and which relate to an *imaginary* standpoint. In ordinary language it is known simply as "*perspective.*"

The observer will henceforth be stationed quite near both to the object viewed and to the plane of the picture. (See Fig. 26.) The visual rays (Section 24), no longer parallel, will converge toward the eye of the observer. This center of convergence is commonly designated the point of station, or P. S.

70. While it is the aim of projection drawing to show objects as they are rather than as they seem, it is the aim of real perspective to show them as they seem, which is often quite different

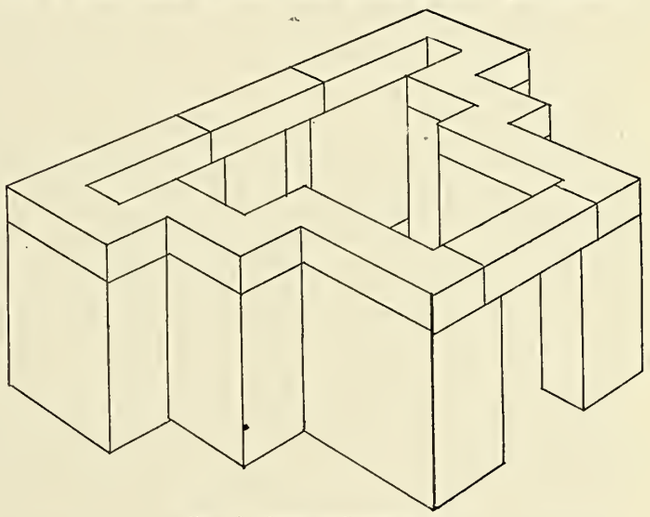


FIG. 98.—OBLIQUE PERSPECTIVE.

from what they are. For instance, we may know that a telegraph pole a mile away is of precisely the same height and thickness as one near at hand, but it does not look so to the eye. We may know that the fences which border a railway are just as far apart in the dim distance as where we stand, but their farther ends seem much nearer together. In a projection drawing the distant pole would be as tall and thick as the nearest one, and the fences would be parallel for their entire length; a perspective makes the distant pole the smaller and makes the fences converge, just as they seem to do. Exterior effects count for so very much in architecture, that it is quite as important for the architect to know how a projected building will *look*, as how it will *be*. To the owners the former is often the prime consideration.

71. The term *linear perspective* is defined in Section 24 and illustrated by Fig. 26.* Were visual rays themselves visible, so that

*Linear perspective deals only with the lines which seem to bound an object and define its parts. There is also *aërial* perspective, which notes the effects of distance, atmosphere, reflections, etc., on the colors, lights, shades, etc., of objects near and remote. To landscape painters it is more important than linear perspective; but it has little bearing on architectural design.

they could be traced from all parts of an object directly to the eye and the points marked where they pierce the plane of the picture, our perspective could be drawn at once by simply joining these points with straight lines. Visual rays cannot be seen and traced in this way, yet their intersections with the picture plane may be found by the rules of projection drawing, and a complete perspective thus obtained. This method is shown in detail in Prof. S. Edward Warren's ingenious book on "Linear Perspective" (see footnote to Chapter V), and forms the basis of the ordinary practice of perspective drawing, as will be shown hereafter.

The method by projections, while complete and correct, is toilsome and slow, and has been largely superseded by expedients based on certain phenomena of vision referred to briefly in Chapter II, which now require farther attention.

72. The apparent size of an object depends mainly on its *visual angle*, i. e., the angle at the eye between visual rays from its extremities. This angle varies inversely with the distance between eye and object—the greater the distance the less the angle. (See Figs. 25 and 99.) Hence, theoretically, the angle becomes zero when the distance is infinite, and, in fact, within a very moderate distance compared with infinity the visual angle becomes so very small that it ceases to be perceptible, and the object itself "vanishes," as we say.* This is why the rails of a track and the parallel fences beside it seem to converge as they recede. Their distance apart is unchanged, as we all know, but the visual angle it subtends is less and less as the track stretches away from the eye so that it seems to grow continually smaller and smaller, and, if the track be visible far enough, the space between the rails will finally "vanish" entirely and they will seem to meet and coalesce. The same phenomenon is observable with a receding line of telegraph poles of uniform height. Each successive pole from the eye will subtend a smaller and smaller visual angle, whence the poles will appear to grow smaller and smaller as the line stretches away into the distance.

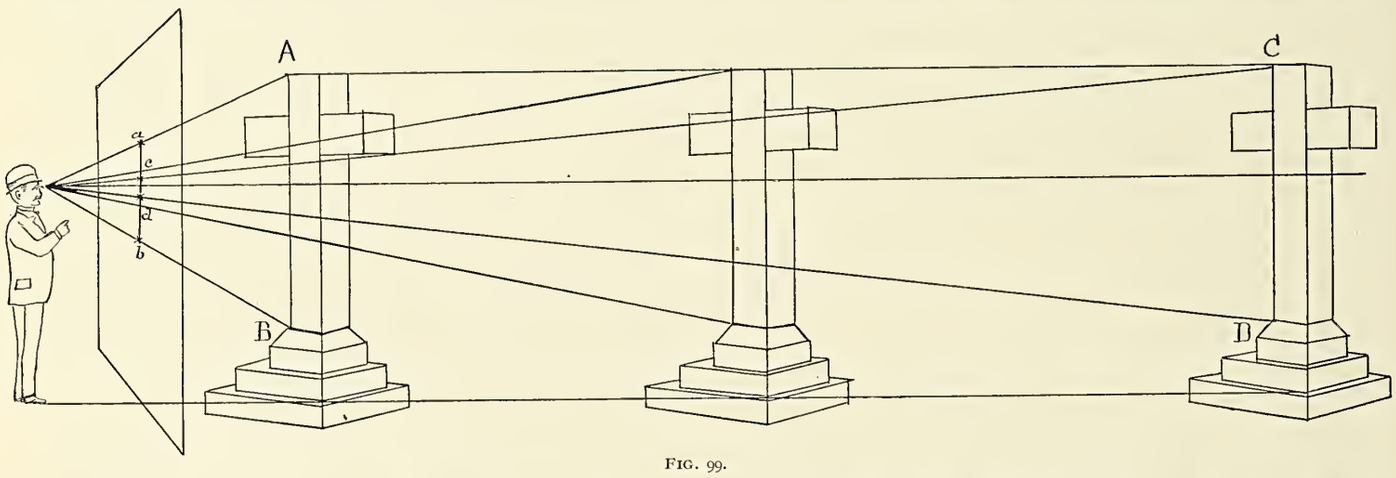


Fig. 99.

73. Another phenomenon connected with receding objects is that horizontal lines above the level of the eye apparently descend in the distance, while those below the level of the eye rise with like uniformity. Also, lines at the right of the observer converge as they recede to various points before him or at his left, while corresponding lines at the left stretch away to "vanishing points" at the right. Other lines still display no convergence whatever, but retain their true shape and position at all distances. These apparently complicated phenomena of lines, directions and angles, which seem to the eye so different from what they really are, result from simple principles relating to the visual angle; and, in place of confusion, they are all governed by laws and observe a harmony which, once known, may be traced throughout.

74. The direction in which the observer looks at any moment is called the *line of vision* for that moment. When not stated otherwise, he will be assumed to stand on the same level with the plane of the picture (Fig. 26), whose position is always vertical, and to look directly at it on a level line at the height of the eye, and "normal," i. e., perpendicular to the picture plane. Such a line of vision may be designated as the *normal line of vision*, in distinction from lines of vision in other directions, as when the observer turns his glance sidewise or upward or downward. The latter may be called *oblique lines of vision*. The object viewed may be anywhere beyond the picture plane.*

In what follows, the term "line of vision" will generally be understood to mean the *normal line of vision*, as explained above, and all lines will be understood to be "straight" unless otherwise shown.

75. In Fig. 26 the observer occupies three successive standpoints relatively to a stationary object; in Fig. 99 the same object stands in different positions while the observer is stationary. In both cases it will be seen that the visual angle diminishes alike as the distance from eye to object increases, and that the visual ray from the top of the object is highest when the object is nearest the eye (or the eye is the nearest the object, as in Fig. 26), while the visual ray from the same point is lowest when the object is most remote. This is why the near object seems highest and the distant one lowest; the eye estimates its altitude by the elevation or depression of the visual ray from it.

Likewise for points below the eye: their relative positions also are estimated by the direction of the visual ray. This ray is lowest from the base of the nearest object (Fig. 99), and highest from the base of the farthest one, hence the former appears to the eye decidedly lower than the other. In other words, the visual ray from an object above the eye declines as the object, or the observer, recedes, whence the object itself *seems* to fall, though in fact, it remains at the same level; vice versa, the visual ray to an object below the eye rises with increased distance, whence the object itself appears to rise.

76. Points at the level of the eye do not vary in apparent altitude as they recede or approach. Whatever their position, whether far or near, all such points seem to retain their level, neither falling nor rising. This results naturally from the preceding principles. If all horizontal lines above the eye descend as they recede, and all such lines below the eye rise as they recede, it must follow that horizontal receding lines at the level of the eye will neither rise nor fall, but remain at the same height. When the horizontal lines are normal (perpendicular) to the plane of the picture, the line which they seem to approach as they recede is the normal line of vision (Section 74), while a system of parallels receding in any other direction apparently converges toward an oblique line of vision parallel to the system.

77. The same principle controls parallel lines at either side of the eye; they apparently converge toward a line of vision parallel with themselves. Hence, lines equally distant from the eye, as in the cylinder of lines (Fig. 100), if continued far enough will form an apparent cone, as in Fig. 101. If too short for that, they will form a frustum of a cone, with the remote base more or less reduced in size. Lines not equally distant form under the same circumstances a pyramid or a frustum of one. (Fig. 102.)† The only line which neither rises, falls nor deflects to one side or the other as it recedes, however far into the distance, is the line of vision itself, which is the only line the eye cannot see. It perceives only the terminal point where this line meets the eye. Every other point, lying exactly behind this one, is hidden by it.

*This "vanishing" is not due wholly to the diminution of the visual angle; it is also influenced by atmospheric refraction and absorption, and by loss of reflected light. A small object with polished surfaces well illuminated is seen farther than a larger object of dull exterior and ill-lighted.

*In architectural perspective the plan of the object is usually placed so that one side or one corner shall touch the picture plane, as will be shown farther on.

†A frustum of a cone or pyramid is the lower portion after a part of the top has been cut off

Receding parallel lines wholly at one side of the eye appear as an oblique cone (Fig. 103), or an oblique pyramid (not illustrated), or as their frusta. Relatively to these, the line of vision, which in space is parallel to the lines themselves, becomes apparently the axis within the cone or pyramid, as in Figs. 101 and 102, or the perpendicular from the vertex to the base, as in Fig. 103.

78. An important class of lines, as remarked in Section 73, neither rise nor fall from their true direction at any distance; these are lines sensibly parallel with the observer, and sensibly as near him at one end as at the other. Both ends being equally near, the visual rays from both will be of equal length and slant; hence they will appear alike. The only effect of distance on such lines is to vary their lengths and positions; it does not alter their shapes.

79. In Section 77 it is shown how and why parallel receding lines in nature must appear to the eye to converge and form a cone (or pyramid) with its distant vertex upon the corresponding line of vision, i. e., the line of vision which is parallel to the real lines in space. When the observer looks directly before him, the point of this cone will be exactly in front at the level of the eye, and all parallel lines, wherever situated, will seem to converge toward it. This point, the terminus of the normal line of vision (Section 74), is called the *point of sight*. If the eye turns to the right or the left, taking for a moment an oblique line of vision, for the same moment all horizontal oblique lines parallel to the

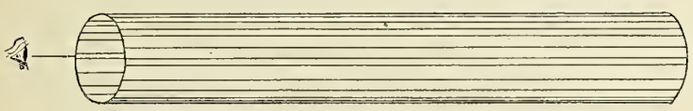


FIG. 100.

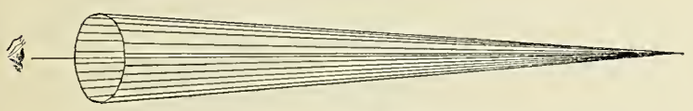


FIG. 101.

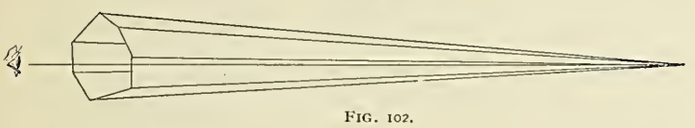


FIG. 102.

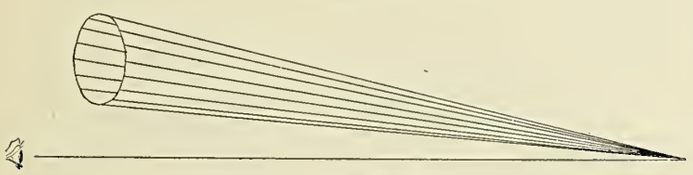


FIG. 103.

new line of vision will seem to form a new cone with its vertex at the end of the new or oblique line of vision. This might, therefore, be called an oblique point of sight; but, as the term "vanishing points" is commonly applied to all such points of sight, it will be retained for convenience.

Now, conceive a distant level line of infinite length to be drawn at the height of the eye. In this line will be found the vanishing points of all level lines which can possibly be drawn, at whatever altitude or depth. As mathematicians express it, this line is the "locus" of vanishing points for level lines. Since this must apply for every direction the line of vision can take, though it sweep all around the circle, our "locus" is in fact what astronomers call a "great circle," situated at the extreme limit of vision. This circle is called the horizon.

80. This circular locus of vanishing points or "horizon" is at the height of the eye. On a level plain of sufficient extent, it is the line where the earth and sky appear to meet (the earth's curvature being disregarded); it is no less marked at sea, where the "sky line" seems to meet the water.

Being at the level of the eye, the horizon is a subjective phenomenon entirely; it has no more existence in nature than a zenith or a nadir. It goes with the eye; it is higher with a tall man than with a short one; if a man ascends to a roof or the top of a steeple, he carries his horizon up with him, and brings it down when he descends. But, though so variable, the horizon is no less important, for to every man it is the limit of his vision, the locus of vanishing points for horizontal lines (so called, perhaps, because they vanish in the horizon), and all nature, as he sees it, is intimately related to his horizon, however it may differ from every other man's horizon.

81. In illustration of these principles a number of photographic views "from nature" are given.

82. Fig. 104 is from a photograph of the Metropolitan Opera House, New York. One oblique point of sight (Section 79) is about eight feet above the sidewalk and slightly at the left of the picture. Place a ruler at the base of the capitals from which the round arches in the first story spring. While six of these openings are in one receding face and three are in another, it will be found that all the capitals from which they rise are very nearly on a horizontal line, the most distant ones at the same level as the nearest. The bases of the piers and the sidewalk lines below rise in each face as they recede, while above this level the string courses and cornices descend toward the distance and their rate of descent increases rapidly with each successive story. By applying a straight edge to the cornice and to the sidewalk lines the left vanishing point can easily be found, as also the vanishing point for the lines at the right. It will be interesting to find these points and then notice how invariably every belt course, sill course and other horizontal line in each face converges to its proper vanishing point.

Fig. 104 is an illustration of what is termed "oblique perspective," the principal surfaces being oblique, as it were, to the observer, while Fig. 103 is a "parallel perspective," one principal surface being parallel with the observer (Section 78). In parallel perspective the surface not parallel (with rectangular buildings) is, of course, at right angles to the spectator, so to speak.

Fig. 105 is a parallel perspective of the Propylæum, at Munich, Germany. The point of sight is at the middle of the space between the central pair of columns and at the base of the shrubbery below the obelisk in the extreme distance. To this central focus the receding lines of the cornices at the sides of the towers, the lines of the roadway and sidewalks in front, and all others which are parallel with them, will be found to point far more unerringly than the magnetic needle points to the pole. The "trueness" of lines in the front is also very marked. There is no convergence and no distortion.

In THE INLAND ARCHITECT, Vol. XIII, No. 3, were published photogravure illustrations of the Victor Emanuel Arcade, at Milan, Italy. One is an exterior view, the other is an interior, both in parallel perspective. They are very interesting to the student of perspective for the clearness with which lines straight and curved in the fronts are shown in their natural shape and direction, and for the pronounced and emphatic convergence of all receding lines to the distant point of sight.

In Fig. 107 this point is at the center of the distant opening, and but slightly above the sidewalk level. In both views the reader may be interested to trace the convergence of receding lines.

Fig. 108 is a parallel perspective of an interior, namely, that of the Spanish Hall in the imperial palace in Prague, Germany. The point of sight is in the distant wall, about six feet above the floor and at the left edge of the pilaster to the right of the niche with statue. The apparently steep rise of the polished floor is to be noted, and the pronounced descent of the level ceiling as it recedes. Were the room long enough the floor would appear to continue its rise till it reached the point of sight on the distant wall, and the ceiling would apparently continue its descent till it actually reached the same level. Then, the floor and ceiling having met, the distant wall would have "vanished."

Fig. 109 is an oblique perspective of an interior in the War and Navy Department building, at Washington, D. C. It may be studied in the same way as the preceding illustrations.

(To be continued.)

THE Vatican, the ancient palace of the popes of Rome, is the most magnificent building of the kind in the world. It stands on the right bank of the Tiber, on a hill called the Vaticanus, because the Latins formerly worshipped Vaticinium, an ancient oracular deity, at that place. Exactly when the building was commenced no one knows. Charlemagne is known to have inhabited it over one thousand years ago. The present extent of the building is enormous, the number of rooms, at the lowest computation, being 4,422. The length of the statue museum alone is over a mile.

HEATING AND VENTILATION OF RESIDENCES.

BY JAMES R. WILLETT.

Copyrighted by the author, 1893.

HOT-WATER HEATING — USUAL METHOD.

THERE are various ways to arrange the pipes from boilers to radiators and from radiators to boilers. The usual way is by feed-pipes leading from boiler to stacks of radiators — that is, radiators which are directly over each other, but on different stories. Plates VII and VIII exhibits an example of this method.

The water passes into the radiators, and there it gives off its heat, and then passes out from the radiators into a return pipe, which is represented by the colder column, and returns to boiler. This process continues as long as there is fire in the boiler. The feeds and returns are separate pipes.

The pipes leading to the upper story, having a higher column of warm water, have more motive force and therefore have a tendency to rob the lower-story radiators. These are made smaller. In other words, the size of the pipe is decreased as it goes upward from story to story, while the return pipe increases as it descends. See left hand of elevation, Plate VII.

Another way of checking the excessive flow to radiators in upper stories is to supply the radiators on lower floor from the top of the tee, and to supply the radiators in the upper stories from the side branch of tee. See right hand of elevation, Plate VII.

The feed connection to the radiators usually has a valve upon it, so that it can be shut, and the circulation of water prevented; while the return connection has no valve.

In this method of hot-water heating, air cocks are needed at the top of each radiator, there being no other way to allow of the escape of the air. Pet cocks are sufficient.

There are two pipes, a feed and a return; and there are two connections with each radiator, the feed and the return, usually both connected with the bottom of radiator, but sometimes the feed connects with the top of radiator.

This method requires more radiator surface than the overhead method already described. The requisite amount is found by calculating that required by the overhead method and then adding twenty-five per cent.

The grate area, expansion tank, etc., will be ascertained in the same way as in the overhead method.

The expansion tank should be connected with boiler by an independent pipe one inch diameter without a valve, running from bottom of tank to bottom of boiler.

One objection to the foregoing method is that each stack of radiators has two pipes, a feed and a return. As the feed usually runs through the rooms, to clothe it would render it large and unsightly, therefore it is usually left uncovered, and since it gives off heat this tends to diminish the rapidity of the circulation. Another objection is that the upper-story radiator has a tendency to rob the radiator in a lower story. These radiators, so to speak, "fight" each other.

The plans of apparatus given on Plates VII and VIII were kindly prepared by Mr. George Phillips. The section was prepared to show different methods of piping.

These plans are for the same house that is shown in Plates I, II and III.

HEATING BY STEAM — LOW PRESSURE STEAM — GRAVITY RETURN — ONE-PIPE METHOD.

Low pressure steam may be defined as a pressure not above fifteen pounds per square inch above the pressure of the atmosphere. The atmosphere, as you know, has a pressure of about fifteen pounds per square inch; and what is termed low pressure steam is not usually more than five pounds pressure above atmosphere, though it may be run up higher. When we speak of pressure we always mean a pressure shown by a steam gauge on the boiler, and means that much above the pressure of the atmosphere.

When the condensed water in the radiators returns to the boiler by its own weight it is called "gravity" return.

With regard to piping from main pipes to radiators:

Up to some years ago there were two pipes for this purpose. One main pipe passed out through the top of the boiler and through branches called "feeds" carried the steam to the radiator where it was condensed, and the water resulting therefrom returned by means of other branch pipes called "returns," to a main return which led to the bottom of the boiler. This is what is called the two-pipe method. Of late years, however, the tendency is to use what is called the one-pipe method.

In the one-pipe method the main usually rises from the top of the boiler as close to the ceiling in the basement as is practicable, then turns and runs horizontally, but with a downward slope so as to reach points below the radiators in the upper stories.

After reaching all these points, this main drops beneath the floor of basement, and returning enters at the bottom of the boiler. From the upper, horizontal portions of the main, branches are taken running upwards to reach the radiators above; there being but one connection with each radiator. This pipe, called by the trade a "riser," has to carry the steam to the radiator and return the water from the radiator. It has been found that if this "riser" is made sufficient size it will do both and do them well. It has the advantage of having but one connection and therefore but one valve to each radiator.

In the two-pipe method you have two connections with the radiator and a valve on each. If the feed is left open while the return valve is shut then water collects in the radiator, and when the feed is opened again and steam enters it, is condensed and noise, which is called pounding, ensues. The water being in the radiator it may freeze, since there is no circulation through the radiator of the steam. On the other hand, if feed should be shut and the return valve left open, no steam enters the radiator, and any steam already in the radiator is condensed and a vacuum formed therein which may cause water to pass up the return pipe into the radiator. Now, this is not a safe proceeding, since the passing of the water from the boiler lowers the water line and may lower it dangerously.

In a steam boiler the water must be kept a certain distance above the smoke tubes or flues. Water must not be kept too low, for then the metal composing the boiler is exposed on the one side to the heat of the smoke flue, while on the other side there is no water to convey away the heat and the metal (iron or steel) may be injured thereby; besides, when other water enters the boiler and strikes this exposed metal surface it may generate steam so rapidly as to cause an explosion.

With the one-pipe method there is but one valve. If it is open it admits the steam and also allows the water to pass away; if it is shut it allows neither the steam to enter nor the water. A person cannot therefore, misuse the radiator in this respect, while with the two-pipe radiator it is a common occurreuce for careless people (and all people are careless) to leave one of the valves shut while the other is left open.

We saw, not very long ago, in one of the architectural papers of the country, the statement that the one-pipe method was not regarded as a reliable and efficient one by experts in heating and contractors of repute. However that may be in the locality where such a journal is published it is certainly not true of Chicago. There the two-pipe method for buildings, especially large ones, has become almost, if not quite, obsolete; and not ouly is this true with the young men who contract for putting in heating apparatus, but the old contractors, who, until a few years ago knew no other than the two-pipe method, are now using the one-pipe method almost exclusively. No one who has ever used a well-designed one-pipe method will ever use the two-pipe method except under special circumstances.

We will here speak of the "low pressure, one-pipe, gravity return" method exclusively.

It may be noticed that in the main, since it pitches downward, both the water and the steam flow in the same direction and therefore they do not "fight" each other. The condensed water in the mains returns to the boiler through a main return.

In the branches or risers the steam is moving one way and the water in the other, and this requires large pipes, especially in the horizontal portions of the branches.

Plates X, XI and XII illustrate the above described methods of steam heating. Plate XIII, first section, also illustrates it.

Sometimes the steam is supplied by the "overhead" method, which is similar to the overhead method of hot-water heating, except that there is but one connection with a radiator and that is at its bottom, a main feed being run up to attic whence branches run out and downward, supplying the radiators as they descend. This is a good method, probably the best. Plate XIII, second section, illustrates it.

What has been said in regard to steam heating refers to what is known as a low pressure gravity apparatus, that is, the steam is at a low pressure and when condensed into water returns to the boiler directly by its own weight. This is almost exclusively the way used for ordinary residences, but for large apparatus the water is sometimes returned to a tank, usually called a receiving tank, and from thence pumped into the boiler. It is sometimes, however, returned from the receiving tank into the boiler by what is called steam traps. These traps, however, do not usually work well except in what is termed a high pressure apparatus.

It is becoming the custom, nowadays, on large work and especially where steam of a high pressure is needed for other purposes, to run the boiler at a high pressure and to run the heating apparatus at a low pressure. This is accomplished by having a "pressure regulator," or governor, on the house-heating main. By means of this pressure regulator, while the pressure on the side toward boiler may be high and fluctuating, the pressure of the side from the boiler, that is of the side toward the heating apparatus, is kept at a low and nearly steady pressure. This, as we mentioned, is used in large buildings; sometimes in flat buildings, which might be termed residence buildings.

By this means the steam pressure in the boiler is kept high and well adapted to run elevators, pumps, laundry and other machinery, etc., while the pressure in the heating apparatus is kept low. Plates XIV and XV illustrate this method.

The connection from steam pipe to radiator should connect with the bottom of radiator, which connection should have a valve upon it.

Each radiator should have an automatic air-cock upon it.

For steam radiator, the sections or loops forming the radiator are connected at the bottom only.

To ascertain the necessary surface in the direct radiators.—For direct radiators take the formula:

$$Q = R\ F\ J.$$

Where Q = Total square feet radiator surface required in a room.
F = A constant = 0.8.
J = A factor depending on the exposure of the room usually.
1.4 for north and west exposures.
1.0 for south and east exposures.

For bathrooms take $J = 2$.
For kitchens take $J = 0.5$.

Direct radiators in entrance halls or near outside doors should be largely increased as heretofore mentioned. The factor J may be taken as 2, or twenty-five to fifty square feet may be added. It is always a good plan to have large radiators near outside doors.

The quantity of fresh air that is necessary to ventilate the residence is to be obtained by rules already given, and this air should be admitted through direct-indirect radiators into stair halls as heretofore mentioned.

The indirect radiator should contain at least one-half of a square foot of surface to each square inch of cross sectional area in fresh-air duct. It is better if the surface of the indirect radiator was increased fifty per cent or more.

The diameters of main feed can be taken from Table V. No return from a main should be more than two sizes smaller than the feed at its commencement (or than its largest dimension). If the main should also be used as a return, which is neither usual or desirable, except in special cases, then such main should be made one size larger than given in Table V.

Mains should rise vertically from boiler in basement as high as is practicable, that is as high as basement ceiling permits, and then turn and run horizontally, but with a downward slope, so as to reach within a few feet of the necessary points to supply the radiators. Then after having supplied the branches it usually turns and runs down below the basement floor and returns to boiler. In all cases it should have a slope and, at its lowest point, a waste cock so that it can be emptied.

The diameters of branch pipes necessary to supply the radiators can be taken from Table V, hereinafter given, but a branch or riser when it leaves the main has to run nearly horizontal (but with an ascending slope) from the main to the point where it turns and runs vertically upward. This horizontal portion should be one size larger than the vertical portion, that is it should be one size larger than given in Table V, which is intended for the vertical pipe.

Add together the square feet of direct radiation and indirect radiation obtained as before mentioned, multiply their sum by 1.1. Considering the product as radiator surface, take the corresponding grate area from Table II.

For steam heating it is important that the boiler has capacity to hold a sufficient volume of water, so that when enough of the water has been evaporated to fill the pipes, radiators, etc., with steam, the water line in the boiler will not be lowered too much, and the tubes, or other heating surface, become uncovered by the water.

It is also necessary to have steam space in the boiler above the water.

For residences you usually must take some ready-made type of boiler. When you know the required grate area, select one having not less than the calculated grate area.

A pop safety valve should always be put on a steam boiler; usually one-inch valve is sufficient.

A pressure gauge should be put on a steam boiler.

HOT-AIR FURNACE HEATING.

Heating by hot-air furnace is a method by which air is heated by what is termed a furnace, and then passed into and through the building.

The hot-air furnace is practically a stove inclosed in a casing, leaving some space between the stove and the casing.

Air, presumably fresh, is admitted at the bottom of this space, and, being heated by the furnace, it passes upward and is led through pipe ducts to various portions of the building.

We will use the formula already given:

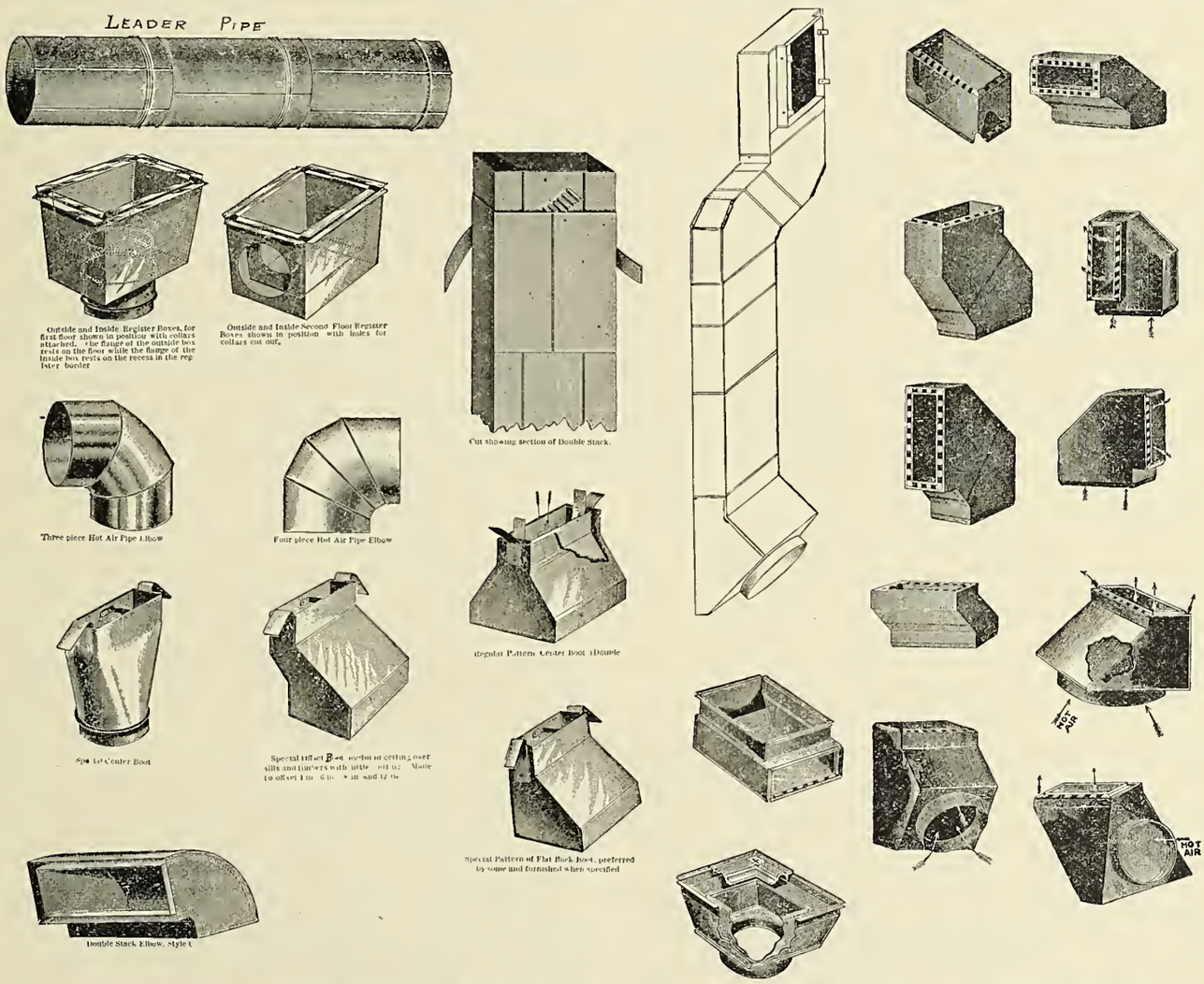
$Q = R\ F\ J$ = cross sectional area of hot-air pipe square inches for the room in question.

The value of R should be calculated by the rule already given for radiator surface.

In first-story rooms take $F = 1.4$.
In second-story rooms take $F = 1.2$.
In third-story rooms take $F = 1.0$.
Take $J = 1.4$ for north and west exposures.
$= 1.0$ for south and east exposures.

Calculate the value of Q for each room.

THE FOLLOWING ARE ILLUSTRATIONS OF SOME OF THE FURNACE FITTINGS THAT ARE USED:



In the first-story rooms the registers, through which the hot air enters, are usually placed in the floor. There are several reasons for this. The partitions of first story are usually occupied by the flues of the second story. Furthermore, ordinarily the partitions would not be large enough to allow of the necessary area of cross section, which is required to be much larger in the first than in the second story.

Round hot-air pipes, called by the trade "leaders," run from the furnace horizontally, but with an upward pitch or slope, to the register boxes in first floor; the upward pitch of these leaders should be made as great as is practicable. These leaders may be

of a single thickness of tin, since they are entirely below the basement ceiling, and do not come in contact with woodwork. Each leader should have a damper in it close to the furnace.

Table VI gives the trade sizes of the leaders.

All flues, pipes, boxes, etc., of every description that may be inclosed in partitions, etc., or that may come in contact with woodwork, should be made of two thicknesses of tin, with air space between. It is also desirable that such pipes, etc., should be thoroughly wrapped with asbestos felt pasted on to the pipes.

The register boxes may be placed in the first-story floor and the leaders should enter them by a curved elbow, what the trade calls a three-piece, or better, a four-piece elbow. Indeed all elbows should be curved and not rectangular.

The vertical hot-air pipes to rooms in second story are called by the trade "stacks." These stacks have usually to pass up within the thickness of stud partitions in first story, and are largely governed by that consideration.

The ordinary stud partitions are made either of 2 by 4 inches or 2 by 6 inches studs. Therefore it is advisable that the outside thickness of the stacks should not exceed 4 inches or 6 inches as the case may be.

The breadth of these stacks is also determined somewhat by the distance of the studs apart. These studs are usually 12 inches or 16 inches between centers, leaving a net space of from 10 to 14 inches for the stacks.

"The custom of placing heads on both ends of stacks and projecting the stacks into the basement and taking collars for round pipes from the side of the stack has been almost abandoned, inasmuch as it has been learned by experience, that by running the stacks down just below the floor line and attaching a boot of suitable shape to the stack, a much better circulation of air is obtained, and a neater and nicer job as well. The expense of the work done this way is no greater than by the old method, for a joint of stack is saved and the two extra heads on the stack."

The above is quoted by kind permission from the catalogue of the "Excelsior Steel Furnace Company, of Chicago."

Though unusual, it is sometimes practicable to carry a stack to upper story outside of a partition. It may be perhaps run inside of a closet or other similar place. In such case it is well to make the stack round instead of rectangular.

Usually when the stack arrives at an upper-story floor it is turned and runs between the joists a short distance, and has its outlet through a register in the floor. Sometimes, however, the stack continues up in the partition just above the baseboard, and the outlet and register are placed at that point. It is perhaps preferable to continue the stack up in the partition to seven feet above the floor, and to place the outlet and register there.

The connection between the furnace and the end of an upper-story stack below the basement ceiling is made by a horizontal leader pipe the same way as described for first story.

Table VII gives the trade sizes of stacks. Do not vary from them if it can be avoided.

It is frequently impracticable to make the stacks to second and upper stories as required by calculation on account of the partitions not allowing thereof. In such cases it is well to enlarge the hot-air flue to hall in first story to the amount of the deficiency.

The registers for any story should be made fifty per cent larger than the sectional area of the pipe with which they connect, or rather than the "calculated" area of said pipe. That is, add fifty per cent to the calculated area of the pipe, and the result will be the gross area of register that should be used.

Wall registers should be convex registers.

There are a great number of patterns of registers made, too numerous to be given here. There are also different styles of finish for which see manufacturers' catalogues.

Table VIII gives a list of the sizes which are mostly used.

(To be continued.)

NOTES FROM OUR FRENCH EXCHANGES.*

ARCHITECTURE IN ITALY.

WHILE the general thought and general tendency in the United States appears to be in the direction of forcing architects to be also engineers, whether they desire or not, it becomes curious to note that this course seems to have been carried into effect in Italy with most disastrous results to modern architecture. And this in a country where by instinct and nature everyone is supposed to be artistic.

Recently the French government has had a report made to it upon the state of the architectural profession in Italy, and in the course of this lengthy document, published in *L'Émulation*, is given the courses of studies in certain architectural schools. Following this the report goes on to say: "A French architect cannot but be struck in looking over these courses at the very little time that is actually devoted to the study of architectural design and composition and at the exaggerated amount of time given to the sciences." But it is also interesting to notice the feeling of the Italians themselves upon this point, as shown in the following extracts: Counting the three years necessary in the preparatory schools for admission, and then three years in the lower classes and four years in the upper classes of the schools, it requires that a young man devote ten years to these special lines of study before he can be the recipient of an architect's diploma. In these studies mathematics have the preponderant rôle, and there has, it is evident, been formed a good engineer, but has there also been made a good architect? The facts answer this question. The great architects of antiquity and modern times have been artists, and not mathematicians. Ictinus and Chersiphron appear to have begun as sculptors. Michael Angelo and Beruini certainly developed their ideal of beauty as sculptors. Some painters have known how to build admirably, and a man of a pure taste like Perrault had shown himself a constructor of ability.

Italian civil engineers have a world-wide fame, and many French corporations, as well as the Brazilian and Servian state railroads, obtain most of their employés from Naples, but, on the other hand, the new buildings erected in Italy, and especially at Naples, are absolutely ugly, and prove the utter incapacity, from an artistic point, of the local architects. A course of instruction, where the artistic side is relegated to the second place, cannot form artists, for no work of art is possible where the imagination and sentiment are left out of the question.

The present condition of architecture in Italy is not brilliant, and everybody knows it; but the question is how to better it. And the answer is, let the architect again become the artist; take him away from the engineering schools and let him grow up in the art schools, with only just enough science so that he can plan a building that will not fall down. Do not overwhelm him with a mass of undigested information, which acts as a bit and holds back the imagination. Ictinus, Giotto, Orcagna, Palladio, and a hundred other architects were artists full of independence, while Michael Angelo, the designer of the cupola of St. Peters, knew nothing of higher mathematics. That such, in fact, is the cause of the decline of architecture in Italy begins to be appreciated by the authorities themselves, and in June last a bill was introduced to modify somewhat this condition of instruction, although evidently it had to be adroitly worded to avoid giving offense to the ever present and insatiable "practical man," who would desire nothing but pure mathematics. In conclusion, a curious confirmation of this theory is pointed out in the present state of architecture at Milan, which undoubtedly has the most artistic modern work of Italy, and here it is that a reasonable amount of art instruction is inserted in the courses of the architectural school, although some higher mathematics are crowded to the wall.

CAUSES OF THE VITIATION OF AIR IN INHABITED ROOMS.

The causes of the vitiation of air in inhabited rooms, according to *Le Moneteur des Architectes*, are of two kinds, one unavoidable, the other avoidable. The first owe their origin to the breath thrown out from the lungs, and also perspiration, secretions of the skin, and artificial lighting. In breathing, man absorbs a certain quantity of oxygen, and gives out carbonic anhydrate, not to mention traces of ammonia. The skin also breathes like the lungs, but its action is very secondary, being only about one-fortieth of the lungs. On the other hand, however, it is the seat of an insensible perspiration, which, in the course of twenty-four hours, gives out a very considerable quantity of water vapor, which, added to that emitted from the lungs, represents approximately in twenty-four hours, 1,000 grammes (2¼ pounds). Besides, the skin secretes organic matters, several of which have strong smell, while the vapor of water sent out from the lungs is always full of organic matter, the rapid decomposition of which is the cause of that sickening smell noticed in halls where many people are assembled. These substances are a most powerful cause of unhealthiness of habitable rooms, since the simple increase of the carbonic acid gas does not of itself explain the difficulty of breathing such impure air and its injurious effects on the system.

This gas is only a true poison in very large quantities. The larger the quantity, the more difficulty there is in breathing, but this inconvenience only appears when the air contains it in great excess. Pettenhofer was able to breathe for several hours, without inconvenience, air containing $\frac{1}{100}$ part of carbonic acid. Forster remained ten minutes in a wine cellar containing $\frac{4}{100}$, but it is to be remarked that this carbonic gas was not the result of respiration, but had been made by chemical agencies. The vapor of water can scarcely be held accountable for the bad effects, so that it must be the decaying organic matter sent off from the lungs in the act of breathing, and the secretions of the skin held in solution by the vapor of water. Direct experiments have, in fact, clearly demonstrated this: In a closed vessel, animals very quickly perish, even when the carbonic acid gas is absorbed as formed, and the oxygen is replaced as used. Another fact, if the condensation on an ice-water pitcher in a crowded room be taken, this water is almost immediately found to be foul. Finally, Mantegazza showed that if two birds of the same size, weight and species, were placed under two glasses of the same dimensions, and if the carbonic acid gas in one is absorbed by quick lime, and in the other the organic matter by charcoal, the second lives much longer than the first. Hence, it is well established that carbonic acid gas is not the principal cause of the unhealthiness of confined air, but that the organic matter exercises the greater influence. Also, there is another point (although not very agreeable to speak of), that is, the cleanliness of the person. In case one has a suspicion in this direction, as is often the case with servants and workmen, the ventilation ought to be of the most vigorous kind. Unfortunately, filth and poverty are synonymous, and poverty and insufficient living space go hand in hand.

To these first causes of the unavoidable vitiation of the air must be added the artificial lighting by kerosene, gas, etc., as ordinarily used, which send out great quantities of unbreathable gases, some of them highly poisonous. Possibly some method may be devised to utilize the heat from lamps, etc., for ventilation,

*Translated and arranged for The Inland Architect by W. A. Otis.

but, in general, at the present time, all such methods are not practicable, and the poisoning of air from these sources cannot be put down to neglect.

A poor system of heating, bad location of water closets and kitchens, and the access of air from cellar into the house, are all causes of vitiation of the air that are avoidable. If an architect is careful, he will only have to combat unavoidable causes in ventilation, the others being easily recognized, and correspondingly easy to remedy.

ASSOCIATION NOTES.

BROOKLYN INSTITUTE OF ARTS AND SCIENCES.

At the annual election of the Department of Architecture of the Brooklyn Institute the following officers and committees were elected for the ensuing year: President, Mr. Walter Dickson; Vice-President, Mr. Isaac L. Ditmas; Secretary, Mr. Albert L. Brockway; Treasurer, Mr. Gustave A. Jahn. Committee on Current Work—Albert E. Parfitt, William Danmar, R. L. Daus. Committee on Museum and Library—R. M. Upjohn, Barr Ferree, Washington Hull. Committee on Competition and Awards—A. G. Thomson, George L. Morse, George P. Chappell. Committee on Professional Practice—William B. Tubby, Isaac L. Ditmas, Charles T. Mott. Committee on Social Intercourse—James H. Merritt, H. P. Fowler, F. J. Berlenbach, Jr. Committee on Finance and Audit—William Adams, C. F. Edminster, Louis De Coppet Berg. Committee on Exhibition—James H. Merritt, William B. Tubby, George L. Morse, Albert E. Parfitt, Franklin W. Hooper, Barr Ferree. Committee on Architectural School—Louis De Coppet Berg, William B. Tubby, George L. Morse, Professor William H. Goodyear, Professor Franklin W. Hooper. Committee on Collecting Photographs of and Preservation of Colonial Architecture—William Danmar, George W. Wundram, Pierre Le Brun, Albert E. Parfitt.

The department contains one hundred practicing architects and two hundred students in offices and studying architecture. Its annual exhibition of drawings just closed was the most successful it has had.

The Architectural School averaged sixty pupils of advanced grades, meeting five evenings each week, under able teachers. Lectures by Professors Plimpton, Sturgis, Goodyear, and practicing architects were given weekly before the Institute and class. The Advisory Board has monthly meetings of a social as well as business character. Many of its members practice in New York city and reside in Brooklyn. It is in the fourth year of its prosperity.

SKETCH CLUB OF NEW YORK.

The April meeting of the Sketch Club was held on Saturday, May 6, at the Hotel Viano, the club having recently given up its rooms on Forty-second street, with the intention of leasing others in the fall.

After the dinner Mr. James Cantwell, artist, addressed the meeting on the subject of outdoor sketching, referring to his own experience, and offering many suggestions. Mr. Julius Harder, of Chicago, a former president of the club, was present at the dinner and spoke of Chicago and the Fair buildings. The decision on the April competition for a memorial library was made by ballot by the members present, Robert Kendrich receiving first mention, and Charles H. Isreah second. There will be one more meeting of the club before the summer vacation.

KANSAS CITY CHAPTER A. I. A.

At the June meeting of Kansas City Chapter, American Institute of Architects, held June 3, Architect J. O. Hogg read a paper on "Graphical Methods of Finding Strains in Roof Trusses." The gist of his argument was that all forces may be analyzed, and if we know their direction and the amount, we can by a graphical method find their resultants and the manner in which they act upon the different members of a truss. The meetings of Kansas City Chapter have been largely attended the past few months and much interest has been aroused.

NEW PUBLICATIONS.

LOGARITHMIC TABLES, by Prof. George William Jones, of Cornell University; Fourth edition; London, Macmillan & Co.; Ithaca, New York, George W. Jones, 1893. Price $1.00; sent free by mail.

This is an octavo volume of 160 pages, 6½ by 10, well bound in cloth, and containing eighteen series of tables. These embrace four-place, six-place and ten-place logarithms of numbers from one up to ten thousand, four-place and six-place logarithms of the six principal trigonometric functions, and a five-place table of natural sines, cosines, tangents and cotangents, tables of prime and composite numbers with their factors from 1 to 2,000, tables of squares, cubes, square roots and cube roots, reciprocals and quarter squares, also of Bessel's coëfficients and of binomial coëfficients, a table of ordinates of the probability curve, probability integrals, etc., and a limited table of weights, measures, and of constants relating to chemistry, physics and engineering. This work is far above the needs of architects or engineers in ordinary practice. It is better adapted to the classroom, laboratory, observatory and for investigators in the higher mathematics. For such uses it is most admirably adapted, being beautifully printed on fine, strong, white paper, in a handsome, round-faced, large type, which it is a pleasure to read. The proportional differences between successive logarithms are given on every page, thus saving the labor of calculating them; and in the arrangement of the lines and columns and of the various formulæ every possible convenience is provided to facilitate the use of the tables. The price of the book is exceedingly low for a work of such high quality.

NORMAN MONUMENTS OF PALERMO AND ENVIRONS: A study by Arne Dehli, architect, author of "St. Mark's and Venice" and "Ravenna," assisted by T. Howard Chamberlain, architect. Price, $5. Ticknor & Co., Boston; A. C. McClurg & Co., Chicago.

M. Arne Dehli, architect and author of several works on Italian architecture, with the aid of Mr. T. Howard Chamberlain, has made a study of the Siculo Norman monuments of Palermo and environs, which is being published in Leipsig, London and Boston, in four parts folio, each containing eighteen plates besides sketches inserted in the text. Part I is already in print. The architecture of Sicily is comparatively little known, although the fame of Monreale and of La Martorana almost rivals that of the Alhambra. The portion before us is in paper cover. It contains sixteen pages of text in large type, describing briefly the topography and history of Palermo, and giving a general review of its architecture and monuments. Of the eighteen plates, 14 by 18, three are photo-grain views of the city with its harbor and of its principal buildings, two are photo-grain views of doorways of the cathedral of Monreale, and one is a beautiful photo of clustered columns in its cloister. One set of these columns is covered with an exquisite carved intaglio in quasi Arabesque, while the adjacent set is covered with a zig-zag mosaic of equal beauty. There are, besides, seven engraved plates of mosaic detail in floors, walls, dadoes, pilasters, etc., and four plates of carved foliage on capitals, super capitals, etc., in which the acanthus forms predominate. This work is printed on fine paper, the engraved plates are drawn to scale, and the mosaic patterns are accompanied by full notes as to colors, etc.

PUMPING MACHINERY.—A practical Hand Book relating to the Construction and Management of Steam and Power Pumping Machines, by William M. Barr, member American Society Mechanical Engineers, with upward of Two Hundred and Sixty Engravings covering every essential detail in Pump Construction. J. B. Lippincott & Co., Philadelphia, 1893. Price, $5.

When an architect or an engineer wants to learn something about pumps it is a satisfaction to know just where to go for the information. This excellent book of Mr. Barr's seems to meet every requirement for a comprehensive reference manual sufficiently free from technicalities for the average reader. The work is an octavo of 447 pages, copiously illustrated with admirable cuts and plates. It is filled with practical information of precisely the kind which a busy man most wants and wants in such shape that he can get it at once without being obliged to read a hundred pages more or less of preceding matter in order to understand it. There are nineteen chapters, embracing pressure pumps, steam and power crank pumps, direct acting steam pumps, duplex pumps, compound direct-acting steam pumps, fire pumps, mining pumps, rotary pumps, centrifugal pumps and high-duty pumping engines, direct acting and with fly-wheels. Six chapters are devoted to the details of pumping machinery, such as water pistons, plungers, valves and seats, air and vacuum chambers, suction and delivery pipes, etc.

The literary quality of the book is of a high order, the dry and technical minutiæ of pumping machinery being discussed with a simplicity and intelligence which make a very entertaining volume.

MOSAICS.

JULES F. WAGMAN, formerly with D. H. Burnham, architect, has commenced practice, with offices in room 64 at 70 La Salle street, Chicago.

G. W. E. FIELD, formerly of the firm of Read & Field, architects, of Cincinnati, has opened an office at 12 North Ninth street, Richmond, Virginia, where he will continue practice.

THE dissolution of partnership between Bernhard Becker and E. O. Fallis, of Toledo, is announced, each continuing practice, the former at room 37, Chamber of Commerce building, Toledo.

THE Circular of the School of Architecture of the University of Pennsylvania, just received, is a very attractive four-page leaflet, in two colors, describing in brief and comprehensive form the advantages offered by that institution, its faculty, course of instruction and equipment. It is of special interest to note that in addition to the regular four-year course, there is a special course of two years' duration consisting of strictly professional work. More than this, a new departure has been inaugurated in the establishment of a two-year course in interior decoration or interior architecture, to which women are admitted. The profession of interior decoration is a new one, but is steadily increasing in favor, and the course offered appears excellent.

THE Century Company will show in their exhibit at the Columbian Exposition a great number of interesting original manuscripts and drawings for important illustrations in the *Century* and *St. Nicholas*. Manuscript poems by Tennyson, Longfellow, Whittier and Bryant will appear in the *St. Nicholas* exhibit, with the manuscript of the first chapter of "Little Lord Fauntleroy," by Mrs. Burnett, and original stories by other well-known writers. The originals of famous letters and documents quoted in Messrs. Nicolay and Hay's "Life of Lincoln" will be shown, including a certificate of a road survey made by Lincoln in 1834, with bill for his services at $3 a day, the letter of the committee apprising Mr. Lincoln of his first nomination for the presidency and his reply, the corrected copy of the inaugural address from which he read, March 4, 1861, the original draft of his proclamation calling for

75,000 men, drafts of important messages to Congress, as submitted to the cabinet, Mr. Lincoln's written speech on presenting Grant his commission as lieutenant-general, and the autograph copy, in pencil, of General Grant's reply. Letters from General Grant to the editors of the *Century* regarding his papers for the War Series — the last from Mount McGregor — will be exhibited, with original manuscripts by General McClellan, Joseph E. Johnston and others. The Century Company will show also how an illustration is prepared for the magazine, from the artist's drawing to the printed page, by wood engraving and by various photo-engraving processes; how the "Century Dictionary" was made, with copies of the earliest English dictionaries, and manuscripts and proofs of the "Century Dictionary" in various stages. This exhibit, with that of other publishers, will be found in the north gallery of the Manufactures and Liberal Arts building.

The New Catalogue of the Yale and Towne Manufacturing Company.—Ever since the Yale lock became famous, the Yale and Towne Manufacturing Company, of Stamford, Connecticut, has maintained a high reputation for successful innovations on the old order of things. Their latest achievement is in the line of trade catalogues. The ponderous regulation catalogues of lock makers, in which their multiform products were all depicted of full size, have long burdened and filled up the scanty space architects usually have for such literature, who have nevertheless been reluctant to consign to the waste basket books which have plainly cost so much money and which they may some day wish to consult. By simply showing their wares on a reduced scale, without in the least impairing the value of the cuts, the Yale and Towne Company have compressed Catalogue No. 14 within the limits of a very convenient duodecimo 5½ by 8 and but three-quarters of an inch thick, there are three hundred pages of the finest calendered book paper beautifully printed and embellished by the most artistic cuts that photography can produce, handsomely bound in vellum cloth and leather, in olive green and tuscan red. The result is a volume which for beauty of exterior will not suffer in comparison with any other productions of the bookmaker's art.

Beginning with Volume V, the first number of which has been issued, the *Technology Quarterly* will be published by the Society of Arts of the Massachusetts Institute of Technology, under the title, *Technology Quarterly and Proceedings of the Society of Arts.* The *Quarterly* thus becomes an official publication of the Institute. Its character, however, will not be greatly changed, although the publication of all the principal papers read before the Society of Arts will slightly increase the proportion of technical subjects. It is proposed, also, to make the members of the society and the alumni of the institute better acquainted with the progress of the institute in new courses of study, methods of instruction, equipment, etc., and it is hoped, therefore, that it will receive the hearty support of the alumni. In order to make the price of subscription more nearly equal to the cost, and in view, also, of the fact that the membership fee of the Society of Arts is $5 per annum, the executive committee have placed the subscription price for those not members of the society at $3 per annum, postpaid. Members of the society will receive the *Quarterly* free of charge. Full sets of the first four volumes, except Vol. I, No. 1, will be supplied to members of the Society of Arts, if they desire, at $5 for the set. The *Quarterly* will be sent to the present subscribers unless instructions are received to the contrary.

"A traveled Frenchman was asked the other day how the buildings of the Columbian World's Fair compared with those of the last exposition in the French capital. He replied: 'The buildings in Paris were what you might have expected in Chicago; the buildings in Chicago are what you might have expected in Paris.'" This is the significant sentence used by Charles Dudley Warner in the *Study* to point a moral to the United States. "This result," he says, "has been reached by the exercise of practical good sense. The genius appropriate to the task was appealed to. Those having the Fair in hand called in experts, not ward politicians, as has been too often the practice of the government when erecting public buildings. As a consequence we have scattered all over our land government buildings, customhouses, postoffices, courthouses, built by first-rate politicians, good story-tellers, able lawyers or brilliant veterinary surgeons — rarely by good architects. Some of these buildings are hideous, some commonplace, nearly every one uninteresting. There are scores of these as alike in architectural negligence as loaves of bread. There was once a man who was architectural boss for the government that will take years and years and conflagrations to recover from. Think of the presumption of this man putting up a federal building in Boston while Richardson was alive! Millions of money wasted that might have gone into works of art that would have been instructive to the people — educated and raised the taste. Alas! Jackson Park shows us too late how beautiful we might have been."

OUR ILLUSTRATIONS.

Classical Designs in Furniture, by Stephen M. Wirts, Chicago.

Residence for G. Rounsavell, Chicago. Frederick W. Perkins, architect.

House for R. Chester Frost, Chicago. William D. Cowles, architect.

The School, Tippecanoe. Crapsey & Brown, architects, Cincinnati, Ohio.

Bushnell Building, Springfield, Ohio. Shepley, Rutan & Coolidge, architects.

Residence for J. B. Ruhland, St. Charles, Illinois. W. W. Boyington & Co., architects.

Church Tower in Truyes, France, and Old House in Angers. Drawn by John Johnson, Chicago.

Presbyterian Church, Du Bois, Pennsylvania. W. J. East, architect, Pittsburgh, Pennsylvania.

Station at Rockford, Illinois, Chicago & North-Western Railway. Charles S. Frost, architect, Chicago.

Original design for Festival Hall, World's Columbian Exposition, Chicago. Francis M. Whitehouse, architect.

Main Entrance, Transportation Building, World's Columbian Exposition, Chicago. Adler & Sullivan, architects.

Denver Architectural Sketch Club Competition. A village church in the thirteenth century English Gothic style, to seat 350 persons. First-place design by Harvey Pridham.

Metropolitan Opera House, New York; the Propylæum at Munich; Spanish Hall, Imperial Palace, Prague (Figs. 104, 105 and 108), illustrating Chapter VI of article on Direct Methods of Architectural Perspective, by C. E. Illsley.

Photogravure Plate: Residence of D. E. Taylor, Scranton, Pennsylvania. E. G. W. Dietrich, architect, New York. Residence of Thomas E. Jones, Scranton, Pennsylvania. E. G. W. Dietrich, architect, New York.

PHOTOGRAVURE PLATES.

(*Issued only to subscribers to the Photogravure edition.*)

First Presbyterian Church, St. Louis, Missouri. John G. Cairns, architect.

Residence of Dexter Tiffany, St. Louis, Missouri. Grable & Weber, architects.

Residence of Mrs. E. Bent, St. Louis, Missouri. Eames & Young, architects.

Residence of F. W. Humphrey, St. Louis, Missouri. Eames & Young, architects.

Residence of G. E. Sterling, St. Louis, Missouri. Eames & Young, St. Louis, and Rossiter & Wright, New York, architects.

Highland Park Club, Highland Park, Illinois. Pond & Pond, architects, Chicago. An exterior view and view in reception hall are shown.

BUILDING OUTLOOK.

Office of the Inland Architect,
Chicago, June 15, 1893.

The usual developments in trade and in financial channels during the past few months have exerted very little effect indeed upon industrial affairs. The productive forces have been even more actively at work during the past five months than during the same time last year. Profits in trade have not been as large, perhaps; but the volume of exchanges as measured by yards, gallons and tons has been greater, and that in face of bank failures all over the world, declining values, and threatening insolvency of vast interests. It is pleasant to take a view of the industrial situation at this time. The mills, shops and factories of the country are, as a rule, crowded. Outside operations are not being checked. House and factory building is if anything more active than last year, not only in the larger cities but in the smaller towns. Building material is in active demand everywhere and for some kinds even fractionally higher prices are paid this year. Brickmakers and lumber dealers report a very good demand in all sections. Planing mills have had no idle days. Carpenters, painters, masons, bricklayers and all classes of skilled workmen connected with the building trades are and have been busy, and according to all indications there will be no cessation in activity until cold weather. One very encouraging feature is the large amount of new work along the lines of most western railroads. Throughout the East the industrial reports are all of a favorable character. A lockout is threatened in the iron trade at Pittsburgh, but so far as known no other labor troubles are threatened. Commercial failures are in excess of last year, but not to an alarming extent. Gold exports to the extent of sixty-five million dollars this year cause alarm to moneyed interests. Financial conditions are unsettled in many quarters of the globe. A liquidation is in progress, but relief from that drastic process may be remote. Railroad building in this country is still at a low ebb, but it is probable that the construction of electric lines will employ a vast amount of capital in the near future. Those who measure national prosperity by the amount of speculation indulged in and enormous individual fortunes built up will not find much to comfort them at this time. The great body of the common people are doing well and are measurably content. There is nothing to cause alarm beyond an unsettled financial system, and in some respects it is to be regretted that such a country and people as this should not have a broad, definite and permanent monetary system.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than $5,000 are not published.

Chicago, Ill. — Architect W. G. Barfield: For G. Hofman, at Western Springs, a two-story, basement and attic residence, 30 by 54 feet in size; to be of frame construction with stone basement, have hardwood finish, electric light, hot-water heating, etc. For O. Marsh, at La Grange, a two-story, basement and attic frame residence, to have a stone basement, all the sanitary improvements, electric light, mantels, furnace, etc.

Architect D. A. Lapointe: For Mrs. Julia Howe, a three-story and basement residence, 25 by 80 feet in size, to have a stone front, oak interior finish, mantels, electric light, bells, speaking tubes, heating, fine open plumbing, laundry tubs, etc.; cost about $15,000. For S. H. Warner, on Washington boulevard, a two-story, basement and attic residence, size 25 by 75 feet, to have a handsomely designed front of raindrop stone, hardwood interior finish and mantels, electric light, bells, speaking tubes, heating, laundry tubs, etc.; cost about $15,000.

Architect George Grussing: For John Collins, at 901 Walnut street, a three-story flat building, 48 by 64 feet in size; to be of stone front, all the sanitary improvements; cost about $16,000. For Mrs. Johnson, at Sixteenth street and Trumbull avenue, Lawndale, a two-story and basement flat building, 25 by 52

feet, to be of pressed brick and stone front, have all the improvements, and cost abont $10,000. For Albert Koch, at 904 Walnut street, a three-story and basement flat building, 24 by 64 feet in size, to be of stone front, have hardwood finish, the sanitary plumbing, lanndry tnbs, etc.; cost about $10,000. For Dennis Considine, on Fulton street near Sacramento avenne, a three-story flat bnilding, 24 by 65 feet, to have a handsome stone front, hardwood finish and mantels, all the sanitary conveniences, lanndry tnbs, modern heating apparatus, electric bells, speaking tubes, etc.; cost $10,000.

Architect J. H. Moore: For F. W. Morgan, on Washington boulevard near Kedzie avenne, a two-story, basement and attic residence; size 47 by 75 feet, to have a front of pressed brick and stone, hardwood interior and mantels, electric light, steam heating, the best of open plumbing, etc.

Architect Frederick Ahlschlager: For S. Glickmann, corner of Brown and Fourteenth streets, a four-story and basement store and apartment house, 65 by 100 feet in size; to have a handsome stone front, hardwood finish and mantels, electirc light, heating, all the sanitary improvements, electric bells, speaking tnbes, lanndry tnbs, etc.; cost abont $38,000. For S. Meisler, on Fourteenth and Morgan streets, a four-story and basement store and flat building, 50 by 100 feet in size; to be of stone front, have hardwood finish and mantels, the best of sanitary improvements, electric light, steam heating, etc.; cost $30,000.

Architect Frederick Foehringer: For Lonis Grimme, on Adelaide avenne, a two-story and attic frame residence; size 22 by 70 feet; to have a stone basement, all the sanitary conveniences, lanndry tnbs, bells, speaking tubes, etc. For J. Busan, on Mohawk street, a three-story and basement flat bnilding, 22 by 119 feet in size; to have a front of pressed brick with stone trimmings, bathrooms, closets, mantels, laundry tubs, bells, speaking tnbes; cost $15,000.

Architect Oscar Cobb: Made drawings for finishing hall and making into theater for Steinberg Opera House, at Traverse City. Also, finished drawings for a three-story business block and theater; size 66 by 165 feet; to be erected at Faribault, Minnesota, for the Faribanlt Opera House Company; to be of pressed brick and stone, have steam heating, electric light, etc.

Architects Chnrch & Jobson: For J. A. Sacklery, at 1268 Washington boulevard, a two-story basement and attic residence; size 27 by 61 feet; to have a stone front, hardwood ,interior fInish, mantels, heating, the best of sanitary improvements, etc.; cost about $15,000.

Architect Simeon B. Eisendrath: For Henry Wittekind, on Twenty-fourth place, a three-story and cellar flat bnilding, 22 by 71 feet in size; to be of pressed brick and stone front, have all the sanitary plumbing, etc.

Architect W. K. Johnson: Has completed drawings for the Ottawa county courthouse, to be erected at Grand Haven, Michigan. It will be two stories and basement, 72 by 100 feet in size, of stone basement and first story, and above of stock brick with stone and terra cotta trimmings. Will pnt in electric light, steam heating, plnmbing arrangements, and all conveniences; cost about $50,000.

Architect E. J. Ohrenstein: For D. G. Swartz, remodeling house and adding one story; new plumbing, etc., at Polk street near Halsted. For Mrs. Mary Williams, on Thirty-sixth street and Parnell avenue, a three-story and basement store and flat building, 41 by 70 feet in size, to be of light colored pressed brick, with stqne trimmings on two sides; have hardwood finish and mantels, all the sanitary conveniences, electric bells' speaking tubes, laundry tubs, etc.; cost about $15,000.

Architect George Beanmont: For B. Harris, at 450 Marshfield avenue, a three-story flat bnilding, 26 by 72 feet in size, to be of stone front; hardwood finish and mantels, steam heating, electric light, all the plumbing specialties, etc.

Architect L. G. Hallberg: For Charles Lindeel, on Newport avenue near Halsted street, a three-story flat building, 25 by 60 feet in size; to have a front of Bedford stone, all the sanitary improvements, bells, tubes, etc.

Architect Arthur G. Morey: For W. N. Hinnish, at Argyle Park; a three-story store and apartment house, 50 by 66 feet in size; to be of pressed brick and stone front; have all the sanitary improvements, oak and pine finish, steam heating, electric light, etc.; also preparing drawings for North End Masonic Temple, to be erected at 615 and 617 Clark street; it will be four stories, basement and attic, and 50 by 152 feet in size; to be of stone and pressed brick; have hardwood finish, tilework, marble and mosaic work, electric light, steam heating, iron store fronts, billiard room, bowling alley, clubrooms, etc.

Architect J. T. W. Jennings: For the University at Madison, Wisconsin, a three-story and attic horticultural building, 60 by 75 feet in size; to be of light colored pressed brick, with brick and Waukesha limestone trimmings; there will be also six greenhouses of glass and iron construction.

Architects Bauer & Hill: For Joseph Rosenberg, on the southeast corner of Cottage Grove avenue and Twenty-eighth street, a four-story store and flat building, 88 by 95 feet in size; to be of stone, terra cotta and pressed brick front, have hardwood finish and mantels, all the sanitary improvements, etc.; cost abont $40,000.

Architects Kley & Lang: For Ferdinand Sczuck, on the southeast corner of Division and Paulina streets; a three-story store and flat building, 25 by 100 feet in size; to be of pressed brick and stone on two sides; have hardwood finish and mantels, all the sanitary improvements, etc. For Joseph Derosa, at 227 north Center avenue, a three-story and basement flat building, 25 by 60 feet, to be of pressed brick and stone front; have all the sanitary improvements, etc. For Julins Schnldt, on Leavitt street near Milwaukee avenue, a two-story and basement store and flat building, 104 feet front; to be of St. Louis pressed brick and stone front; have all the sanitary conveniences, etc.

Architect L. G. B. Bonrgeois: Made plans for railway station, to be erected on One Hnndred and Fifteenth street, opposite to entrance to Monnt Hope cemetery. For C. W. Spaulding, at Edgewater, two two-story, basement and attic residences; to be of frame with stone basements, have hardwood finish and mantels, the best of sanitary improvements, laundry tubs, electric light and hot-water heating.

Architect E. H. Turnock: Made plans for Congregational Church; size 60 by 80 feet; to be erected at Sheffield, Illinois; Rev. A. W. Ackermann; to be of frame with stone basement, have stained glass windows, electric light, etc. Also made plans for M. E. Church; to be erected at Downer's Grove; to be of frame with stone basement, have stained glass windows, electric light, furnace heating, plumbing, etc.

Architect E. Clark: For Richard Blackburne, on Hnmboldt boulevard, north of North avenue, a three-story apartment house; size 22 by 50 feet; to be of frame, have all the sanitary improvements, mantels, electric light, bells, speaking tubes, etc. For Oliver Poyer, at corner of Mead and Cortland streets, a two-story frame flat bnilding; bathrooms, closets, mantels.

Architect A. Drniding: Made plans for a Catholic Church; size 47 by 108 feet; to be erected at Deerfield, Michigan; it will be constructed of pressed brick and stone, have slate roof, stained glass windows, heating, gas fixtures, etc. Also making plans for a Catholic Church; size 45 by 105 feet; to be bnilt at Clintonville, Wisconsin; to be of local brick with stone trimmings, have hardwood finish, gas fixtures, pews, furnace heating; cost $20,000. Also making drawings for a R. C. Church, to be erected at St. Henry, Ohio; it will be 68 by 163 feet in size; of pressed brick and stone with slate roof, steam heating, hardwood finish, gas fixtures, sanitary plnmbing, etc.; cost abont $50,000. Also getting out drawings for a chnrch; size 50 by 125 feet; to be erected at Odin, Kansas; to be of stone all round with slate roof, have hardwood finish and pews, stained glass windows, gas fixtnres, steam heating and sanitary arrangements; cost $35,000.

Architects Thomas & Rapp: Preparing drawings for a two-story and basement school; size 88 by 72 feet; to cost abont $30,000; it will be constrncted of bnff pressed brick and have sanitary conveniences, heating, etc.; location, Oak Park.

Architect James Burns: For J. P. Nelson, on Ashland avenue and Erie street, a three-story store and flat building; size 48 by 54 feet; to be of pressed brick and stone front, have bathrooms, closets, mantels, washbowls, electric wiring, etc.; cost about $13,000.

Architect Joseph Bettinghofer: For Edward Harbester, at 359 North avenne, a three-story and basement store and flat bnilding, 25 by 76 feet in size; to be of pressed brick and stone front, wronght-iron store front, brick bay windows, copper cornice, cypress finish for interior, bathrooms, closets, mantels, skylights. For Frank Deppe, at 1163 North Clark street, a three-story and basement flat building, 25 by 76 feet in size; to be of stone front, bay windows and portico, have copper cornice, oak finish throughout, electric wiring, heating, the modern sanitary improvements, bells, speaking tubes, etc. For John Adler, on Woodside avenue, near Grace street, a frame honse, 22 by 58 feet in size; to have sanitary plumbing. For G. Joelten, corner North avenue and Town street, a four-story and basement store and flat building, size 22 by 90 feet; to cost $15,000; it will have two fronts of pressed brick and stone, cypress finish, bathrooms, closets, mantels, etc. For John Allbeek, on Graceland avenue, near Clark street, a two-story frame flat and store building, size 22 by 92 feet; to have brick basement, cypress finish and sanitary plumbing.

Architect Henry Ives Cobb: For the Dime Savings' Bank, Cleveland, Ohio; a ten-story attic and basement, with sub-basement office building; it will front 70 feet 8¼ inches on Euclid avenue, and 205 feet 8¾ inches on Bond street; the first two stories will be of stone and above of Roman pressed brick to the seventh story, and the remainder of terra cotta; it will be entirely fireproof, of steel constrnction with steel rail footings; the first floor will be used for banking purposes; will pnt in marble, tile and mosaic work, electric light, elevators, etc.

Architect A. Druiding has completed plans for the buildiugs to be erected at Cincinnati, Ohio, for St. Joseph's Convent; the total frontage will be about 400 feet; they will be constructed of pressed brick and stone, have the best of sanitary improvements, heating, lighting, etc. He has also completed drawings for the Polish church, to be erected on Carpenter street; it will be 175 feet long by 102 feet front, with transept 110 feet long; there will be a school in the basement.

Architects Ostling Bros.: For Mrs. Berry, at Deming Court, near Larrabee street, a three-story and basement flat building, 27 by 80 feet in size; to be of stone front, have all sanitary improvements, steam heating, and cost $16,000.

Architect J. J. Egan has just let contracts for the new wing for the Chicago Industrial School, to be built on Forty-ninth street and Indiana avenue; it will be five stories, 110 by 60 feet in size, of pressed brick with stone trimmings. Also jnst let contracts for the new wing to be built to Mercy Hospital, on Twenty-sixth street and Calumet avenne; it will be four stories and basement, 90 by 150 feet in size, of stone for the first story and Roman tile and terra cotta above. Also preparing plans for parochial residence; two-story, basement and attic, 30 by 60 feet in size; to be of pressed brick and stone front; to be erected at Clinton, Iowa.

Architects Faber & Pagels: For Lorman P. Shriver, at Sheridan Park, a two-story, basement and attic residence, 22 by 48 feet in size; to be stone front, have hardwood finish, etc.

Architect Cass Chapman: For Mr. Hopson, at Park row near Illinois Central station, four-story store and flat building, 25 by 120 feet. Also finishing drawings for Grace Reformed church, 56 by 100 feet in size, to be erected at Fort Wayne, Indiana. Also completed plans for a three-story store and flat building, 23 by 62 feet in size; to be erected on Emerald avenue and Thirty-second street. Also made plans for Allen F. Murray, at 326 Oakwood boulevard, for a two-story stable, 23 by 40 feet; to be of pressed brick and stone, have sanitary plnmbing, living rooms, etc.

Architects Lamson & Newman: For J. Y. Gavitt, on the southwest corner of Jackson bonlevard and Whipple street, two two-story residences, 50 by 72 feet in size; to be of stone front, have hardwood finish and mantels, steam heating, electric light, etc.; cost $20,000.

Architects Flanders & Zimmerman: Have just commenced work on the four-story apartment house, 50 by 85 feet in size; to be erected at Indiana avenue, south of Thirty-ninth street, for J. O. Malley, first story to be of stone and above to be of buff pressed brick and stone; will put in steam heating, electric light, the best of sanitary and modern conveniences.

Architect Robert C. Berlin: For M. R. Kelley, on School street near Clark, a three-story flat building, 22 by 52 feet in size, to be of pressed brick and stone front, have all the sanitary plumbing, mantels, heating, etc.

Architects Dixon & Brookes: For William Sivyer, on Jackson avenue near Fifty-sixth street, two three-story and basement residences, 37 by 60 feet; to be of stone front, have hardwood finish, electric light, heating, etc.

Architect J. E. Schiller: For R. H. Stearns, at Berwyn, a two-story basement and attic residence, 27 by 45 feet; to have a stone basement and the remainder of frame, have hardwood finish and mantels, electric light, laundry tubs, furnace, etc.

Cincinnati, Ohio.—Reported by Lawrence Mendenhall: The skies have been unusually leaky this spring, and the month of May will certainly go down in weather history as one of the most rainy months for years. As a result trade in most every branch has been delayed, but with a good prospect later on. Cincinnati architects are securing in addition to city work their full share of outside business. The Cincinnati man is bound to be heard from. Although the buildings now in process of erection are not skyscrapers, or palaces, yet several large office and store buildings, and many beautiful residences will adorn Cincinnati and her suburbs. The Phœnix Club building will also be an edifice of which all Cincinnatians can well be proud, while the Rawson, Kittredge, Specker, Carothers, Whitman and Barnes buildings, and Shoemaker, Goepper, Segal, Chatfield, Lawson and Doctor Davis' residences, together with several beautiful churches, will also speak well for Cincinnati, and her citizens.

Architects Des Jardins & Hayward have prepared plans for a residence for Mr. Jacob Fecheimer, Cincinnati; materials: pressed brick, slate roof, furnace, hardwood, grates, mantels, stained glass, blinds, etc.; cost $12,000. For Dr. D. W. Clancy, Seventh and John streets, Cincinnati, a residence; materials: pressed brick, slate roof, grates, mantels, stained glass, blinds, etc.; cost $5,000. For Mr. Isaac Winkler, Cincinnati, a residence; materials: brick, slate roof, furnace, grates, mantels, gas, plumbing, etc.; cost not given.

Architect Emil G. Rueckert has prepared plans for the Butchers' Hide Association for a large warehouse; size 75 by 130 feet; two stories high; materials: common brick, tin roof, elevators, cement floors, gas and plumbing; cost $18,000.

Architect Nash & Plympton can give information concerning a theater; materials: brick, terra cotta, furnace, scenery, chairs, frescoing, etc.; cost not given.

Architects Rieg & Marty have prepared plans for Mr. Harry L. Sunderbruch, florist, Cincinnati, Ohio; materials: pressed brick, slate roof, furnace, grates, mantels, oak and pine finish, stained glass, etc.; cost $10,000.

Architect Henry E. Siter has been authorized to prepare plans for a public school; address Jacob E. Cormany, Board of Education of Cincinnati; cost to be $75,000.

Architect S. S. Godley has drawn plans for a large hotel at Connersville, Indiana, for the McFarlan Building Company; materials: glazed rock, face brick, terra cotta, stone, iron, tin roof, elevators, grates, mantels, etc.; cost $85,000. Residence for Mr. W. L. Hunt, care of Fleischman Yeast Company, Cincinnati; materials: pressed brick, slate roof, furnace, hardwood, grates, mantels, stained glass, etc.; cost not given.

Architects Crapsey & Brown report: For the Baptist Congregation at Dayton, Kentucky, a church edifice; materials: brick, stone trimmings, slate roof, pine finish, gas, pews, stained glass, etc.; cost $12,000.

Architects Dittoe & Wisenall report: For the Christian Congregation at Covington, Kentucky, a church edifice; materials: brick or stone, slate roof, hardwood, stained glass, pews, gas, plumbing, furnace, etc.; cost $20,000. Also, houses for Bradford Shinkle, Esq., Covington, Kentucky; materials: pressed brick, slate roof, gas, plumbing, furnace, pine finish, etc.; cost $20,000.

Architect G. W. Drach reports: For Dr. J. M. Ratliff, Clifton (Cincinnati), Ohio, a residence; materials: frame and plaster, shingle roof, furnace, glass, gas, plumbing, wood mantels, etc.; cost $6,000. Also, for Edward Hart (Fifth near Walnut), Cincinnati, five frame houses; materials: frame, shingle roof, furnace, glass, gas, plumbing, grates, mantels; cost $18,000.

Architect G. W. Rapp has prepared plans for a boiler and water house for Cincinnati Gas Company; it will be three stories high and occupy a space 55 by 135 feet; cost not given.

Architect W. C. Lawrence has prepared plans for the African M. E. Church on Walnut Hills, Cincinnati; materials to be brick, stone, slate roof, pine finish, pews, organ, etc.; cost $6,000.

Architect E. H. Moorman (Glenn building) is one of the new young architects of which our craft can be proud. He has lately opened an office, and already has his time well employed. He has prepared plans for residences

for Mr. E. Jones, Mr. P. Langdon and Mr. H. Smith, who can be reached care architect.

Cleveland, Ohio.—Architects Shengle & Dalman report: A stone, brick and terra cotta Odd Fellows' Temple at Canton, Ohio, 45 by 113 feet, four stories high, fitted for store rooms, offices and lodge rooms; slate and tin roof; cost, $35,000; the main lodge room will be two stories high. J. W. Dalman withdraws from the firm June 17, to assume the duties of City Building Inspector, to which office he has just been appointed. Mr. Shengle will continue the business.

Architects Lehman & Schmidt report as follows: Tifereth Israel Congregation Temple, 100 by 150 feet (auditorium is 76 by 76 feet), to be built of stone in the Romanesque style, slate roof; cost, $75,000. For Hubbard Cooke, a five-story manufacturing block of brick, 50 by 160 feet; cost, $14,500.

Architect Arthur N. Oviatt reports: A stone and frame residence, 40 by 72 feet, covered with slate, for W. H. Quayle, on Euclid avenue; cost, $10,000. For H. D. Bruer, on Euclid avenue, a frame residence, 40 by 60 feet, finished throughout in hardwood, heated by steam and very thoroughly equipped with electricity; cost, $16,000; stable for same to cost $3,000. For J. J. Purcell, a frame residence, on Bolton avenue, 60 by 36 feet, hardwood finish, slate, furnace heat; cost, $6,000. Mr. Oviatt is also preparing plans for a stone and frame house for himself, 36 by 55 feet; cost, $5,000.

Architect J. N. Richardson reports: A one-story brick and cut stone engine room for the Cleveland City Cable Company, iron roof trusses; cost, $10,000. For W. C. North, a frame residence, 40 by 50 feet, slate roof and furnace heat; cost, $5,000. For the Cleveland Wheel Club, an additiou of one pressed brick story to their recently leased building on Huron street, between Prospect and Euclid; to cost $6,000; the Cleveland Wheel Club have a five-year lease of the building, which for years has stood in an unfinished state; it was originally intended for an apartment house and two stories finished in stone; a gravel roof is now being placed upon the addition, to be removed at the expiration of the lease, and three stories added, the whole to be used for an apartment house. For the Cleveland Yacht Club, a frame clubhouse, to be three stories, 72 by 100 feet, with dock 82 by 110 feet; cost, $12,000; the structure will be placed twenty-five feet from the shore to the rear of the building; the first floor will be used for storage purposes, second for billiard rooms, ladies' and gents' parlors, committee rooms, etc.; third floor will be used for a large amusement hall, and an observatory will surmount the structure; a private breakwater will be built about 200 or 300 feet from the shore and 700 feet long, at an estimated cost of $1,000 to $2,000.

Architect B. F. Van Develde reports: A brick and cut stone addition to the Convent of the Good Shepherd, at the corner of Stirling avenue and Sibley street, 72 by 192 feet; to cost $80,000; four stories and finished basement, slate roof. Gothic style.

The Garry Iron and Steel Roofing Company, of Cleveland, Ohio, have largely increased their capacity by adding a 150 horse-power engine and several other machines necessary to improve and expedite their work as the rapid increase of business demands it.

Architects Coburn & Barnum report: A frame residence for P. J. McMyler, at Lakewood, Ohio, 44 by 61 feet; to cost $10,000. Additions to summer cottage for W. H. Gaylord, at Collamer, Ohio; cost, $6,000. A four-story pressed brick, cut stone and terra cotta block at corner of Pearl and Carroll streets, for Mr. George W. Merrell, 60 by 124 feet, steam heat, electric elevators and electric light. For Professor F. M. Comstock, of Case School of Applied Science, a modern frame and shingle residence, 32 by 50 feet; to cost 5,500.

Architect Henry Ives Cobb, of Chicago, through his representative, William Knox, reports: The Cleveland Syndicate Building, to be built on Euclid aveune, Bond and Vincent streets, 71 by 205 by 47 feet on ground, basement and eleven upper stories, ten stories finished for stores, banks and offices, the top one for tanks, etc., and a photograph gallery at the Vincent street end; the first and second stories will be of Berea gray sandstone, six stories above of Roman buff brick, the three top stories and cornice to be of most elaborate terra cotta, highly decorative; the style and construction of the building will be similar to the Hartford Buildiug, Chicago.

Denver, Colo.—Architects Lang & Pugh: For C. J. Kinna, a two and one-half story stone and brick residence, size 33 by 42 feet; cost $10,000.

Architect F. E. Kidder: For Hebard & Wiggins, a two-story business block, stone and brick, size 26 by 119 feet; cost $8,000.

Architect E. C. Greaser: For C. S. Anderson, a two and one-half story dwelling, stone and brick, size 32 by 50 feet; cost $16,000; contractors, Coe Bros.

Architect D. W. Orr: For Thomas Ryan, a two-story brick terrace, size 32 by 125 feet; cost $10,000.

Architect C. Drayer: For R. Treen, a two-story house, size 25 by 49 feet; cost $5,000.

Architects Bartlett & Petie: For Emma Cox, a two-story dwelling, brick and stone, size 27 by 36 feet; cost $5,000.

Architect William P. Feth: For J. D. Persing, a two-story dwelling, size 32 by 40 feet, brick and stone; cost $5,000. Also for M. Milkorn, a two-story stone dwelling, 37 by 37 feet, cost $7,000.

Architect F. E. Edbrooke: For Daniels and Fisher, a one-story addition to business block, stone and brick, size 125 by 175 feet; cost $25,000.

Architect J. J. Huddart: For J. Milheime, a two-story brick residence, size 41 by 54 feet; cost $10,000.

Detroit, Mich.—Architects Malcomson & Higginbotham: For the St. Joseph Protestant Episcopal church, size 72 by 120 feet; stone, Romanesque order, interior red stone; cost $40,000. For W. S. Stapleton, a two-story residence, stone and brick; cost $18,000. For George E. Wasey, a two-and-a-half-story stone residence; cost $15,000. For R. L. Webb, a two-story brick double residence; cost $6,000.

Architect A. E. French: For H. Williams, a two-story brick house; cost $5,000. Also F. H. Jerome, a two-story frame house; to cost $5,000.

Architect G. W. Lloyd: For N. Flattery, a three-story double residence, size 44 by 100 feet, Ashland brownstone and brick; cost $20,000. For D. Match, a three-story brick building; cost $22,000.

Architect George W. Myers: For W. W. Smith, a two-story frame house; cost $5,000. For George E. Frothingham, a two-story frame clubhouse; cost $5,000.

Architect J. E. Mills: For A. Grosfield, a block of three-story brick stores and flats; cost $12,000.

Architect F. J. Shefferley: For Capt. W. H. Stevens, a cobblestone residence; to cost $10,000.

Architect George C. Oldfield: For W. G. Newton, a two-story brick residence; to cost $7,000.

Architects A. C. Varney & Co.: For John P. Kerscht & Co., a block of six three-story brick store and flat buildings, pressed brick and brownstone; cost $30,000. For W. W. Hannam, a three-story brick double residence; to cost $12,000.

Architect William Joy: For Andrew S. Nelson, a two-story frame residence; to cost $6,000.

Architects Donaldson & Meier: For the Tarrand & Vosey Organ Manufacturing Company, a $20,000 brick addition.

Architect Thomas Hyland: For L. S. Rogers, a two-and-a-half-story brick house; to cost $6,000.

Architects E. A. Walsh & Son: For George Smith, a two-story brick residence; cost $5,000. For William May, a two-story brick dwelling; cost $5,000.

Architect E. E. Myers: For Rev. D. M. Cooper, a brick and stone residence; to cost $20,000.

Architect F. C. Van Leyen: For Mrs. Joseph Holbrook, two two-and-a-half-story brick residences; to cost $16,000. For John Walsh, additions and improvements to residence; cost $5,000.

Architects Spier & Rohns: For Frederick Toepel, a two-story brick residence; cost $6,000.

Architect H. J. Rill: For the St. John's German Catholic Society, a two-story parochial residence; cost $6,000.

Architect John W. Coghlan: For Shattuck & Davis, a two-and-a-half-story brick residence; cost $10,000.

Architect W. D. Butterfield: For Valpey & Co., a four-story brick block; to cost $18,000. For Shattuck & Dans, a two-story brick double residence; to cost $12,000. For the Congregational Society, of Wyandotte, a $10,000 brick church.

Architect T. J. Frenier has opened an office at No. 29 Whitney Opera House block, for the practice of his profession, and starts out with a number of orders for residences and other buildings.

Kansas City, Mo.—Architects Gunn & Curtiss: For Tarrant county, Texas, a courthouse at Fort Worth, 230 by 150 feet, three stories and basement, with clock tower 200 feet high; to be built of Texas granite and limestone in the Renaissance style; cost $400,000.

Architects Matthews & Sanders: For the Masonic Building Association, at Warrensburg, Missouri, a Masonic hall, stores and offices, 92 by 50 feet, of brick and stone, three stories; to cost $20,000.

Architect L. G. Middaugh: For J. J. McPherson, a brick and brownstone residence at the northwest corner of Elma and Prospect avenues, two stories with interior finished in hardwood; to cost $12,000.

Architect Walter C. Root: For the House Realty Investment Company, a brick residence, at Wabash and Independence avenues, two stories and basement, with slate roof; to cost $8,000.

Architect G. M. D. Knox: For Thomas Green, flat houses at Eleventh and Wyandotte streets, 38 by 60 feet, three stories, of pressed brick and stone; to cost $20,000.

Architects Van Brunt & Howe: For Drury College, at Springfield, Missouri, a girls' dormitory, 140 by 50 feet, two stories high, of brick; to cost $25,000. For the University of Kansas, at Lawrence, a library building with a capacity of 140,000 volumes; to cost $70,000. For Chancellor Snow, of the Kansas State University, a residence at Lawrence, Kansas, of brick, two stories; to cost $9,000.

Architect W. F. Hackney: For the city of Pittsburg, Kansas, a high school building of pressed brick and cut stone, two stories and basement, and having ground dimensions 63 by 88 feet; to cost $25,000.

Architects Vrydagh & Shepard: For Christ M. E. church of Allegheny City, Pennsylvania, a parsouage, two stories, attic and basement, of brick; to cost $15,000.

Architect L. G. Middaugh: For the Sisters of St. Joseph, a brick addition to the hospital at Pennsylvania avenue and Seventh street, three stories, 60 by 60 feet, of brick; to cost $8,000. For the Longan Memorial Church Society, a brick and stone church at Twenty-second street and Prospect avenue; to cost $20,000.

Architect G. M. D. Knox: For the Loose factory of the American Biscuit and Manufacturing Company, a five-story brick building at Second and Main streets, 60 by 142 feet, of brick; to cost $45,000.

Architect F. B. Hamilton: For Mitchelson & Hibbard, a three-story brick business block, at 308 Delaware street; to cost $8,000.

Louisville, Ky.—Architects Drach & Thomas report as follows: Addition to the Hospital College of Medicine; to be three stories high; pressed brick, stone and terra cotta trimmings, slate roof; situated corner of Preston and Chestuut streets; cost $35,000. Block of seven houses for the Home Investment Company; to cost $30,000; brick, stone trimmings; situated corner of First street and Burnett avenue. Block of three houses, frame, for William Porter; to cost $9,000; situated in South Louisville. Residence for William L. Lyons; to cost $6,000; brick with stone trimmings, metal roof; First street near Oak. Residence for Harry Lyons; cost $5,000; brick, stone trimmings; First and Ormsby streets. Brick residence for J. B. Pirtle; cost $6,500; corner of First and Ormsby streets. Residence for Mr. William Porter; to cost $6,000; brick with stone trimmings. Stable for the Cave Hill Cemetery Company; brick with stone trimmings, slate roof; to cost $10,000; situated corner of Dulaney street and Douglas place. Three dwellings for John Doerhoefer, Third and B streets; cost $15,000. Residence, I. I. Sweeney, Owensboro; cost $7,500. Public Schools, Owensboro, eight-room house; cost $9,000. Hodge Tobacco Company, Henderson, four-story factory, 60 by 150 feet in size; cost $18,000.

Milwaukee, Wis.—Architect J. J. Egau, of Chicago: For the St. Patrick R. C. Society, a one-story church buildiug; size 70 by 140 feet; brick and stone; to cost $75,000.

Drs. Alberts & Junge have purchased a site and are having plans prepared for a four-story medical college.

Architect C. F. Ringer: For Mrs. E. Peters, a three-story building; size 22 by 90 feet; stone and terra cotta; cost $10,000.

Pittsburgh, Pa.—Architect B. P. Little: For the school district of Homestead, a three-story brick school building.

Architects Bartberger & East have also prepared plans for the new Nineteenth Ward School.

Portland, Ore.—Architects Ellicott & Lazarus: For William M. Ladd, a two-story club house, for "M. A. A. C."; size 60 by 100 feet; concrete, brick and frame, steam heated; cost $35,000.

Rochester, N. Y.—Architect William Walker is drawing up the following plans: A dwelling house for Mrs. A. E. Woodbury, East street. Alterations to house for Hon. Charles S. Baker, Lake avenue. Two houses for Dean Alvord, Rutger street; cost $9,000. Alterations to residence of Dr. Hayward, East avenue. Block of stores and offices on East avenue; cost $20,000. House for John H. Kinne, on Frank street; cost $5,000.

Architects Nolan, Nolan & Stern have completed a building for Messrs. Garson & Kemgood, on Clinton street; cost about $9,000. For Louis Maier, a three-story brick block; cost about $7,500; and for the Eureka Club Society a club building costing about $100,000 when all completed; latter is finished in the most modern way; front of building on Clinton street is of buff, terra cotta and brick of like color, three stories high, with theater hall in back of building; the front facade is of the character of the Century Club, New York. They also completed plans and began building operations for a six-story clothing manufactory for Messrs. Michaels, Stern & Co., to cost about $75,000.

Architects A. J. Warner & Co.: A new building for the Infants' Orphan Asylum, to be erected on Clifton street; cost $25,000.

Extended alterations to the Cook Opera House, on Saint Paul street, W. J. Brockett, superintendent-architect.

St. Louis, Mo.—Architect J. B. Schaefer: For the Tin Foil and Metal Company, a two-story factory; size 92 by 113 feet; brick and stone; cost $75,000. Mrs. S. A. Thager will build a two-story brick residence, on Morgan and Sarah streets; to cost $8,500.

Architects Jas. Stewart & Co.: For the Ravenswood Distillery Company, a seven-story warehouse; brick and iron; cost $15,000.

Architect G. W. Heimburger: For R. N. Denham, Fort Worth, Texas, a two-story flat building; size 22 by 80 feet; brick and stone; cost $5,000.

Architects Jungenfeld & Co.: For the Lungstras Dyeing and Cleaning Company, a four-story brick factory, size 39 by 40 feet; to cost $13,000.

Architects Beinke & Wees: For S. Bowman, a three-story brick and stone flat building, size 48 by 96 feet; to cost $20,000. Also for Mrs. Laumeyer, a two-story residence, size 34 by 60 feet, brick with stone foundation; to cost $18,500.

Architects P. F. Meagher & Son: For George Pinkel, a two-story brick store building, size 42 by 52 feet; to cost $16,000. For the Rev. Joseph Shields, a two-story Catholic church, brick, stone foundation, size 40 by 109 feet; to cost $15,000.

Architect W. A. Swasey: A two-story residence, brick and stone, size 32 by 61 feet; to cost $14,000.

Architects Grable & Weber: For John F. Yeager, a three-story store and flat building, size 32 by 65 feet, brick and stone; to cost $18,000.

St. Paul, Minn.—Architects Buechner & Jacobson report plans for a brick addition to Bethesda Hospital, on Ninth and Waconta streets; it is to be four stories high, 55 by 55 feet, and fitted with all modern conveniences; to cost abou t$25,000.

Architect George Bergmann reports plans for a frame dwelling on Bellows street, between Delos and Bluff streets, for George Michel; it will cost $5,000 and have all conveniences.

Architects Herman Kretz & Co. report plans for a two-story pressed brick and stone store building, 60 by 80 feet, on West Seventh and Warsaw streets; Frank Machiavee is the owner.

Herbert G. House, of Chicago, will have plans drawn for two apartment houses, to be 60 by 333 and 80 by 330 feet, respectively, on Woodward and Partridge streets; they will be of stone and brick, four stories high and fitted with all hotel conveniences.



RESIDENCE OF D. E. TAYLOR, SCRANTON, PENNSYLVANIA.

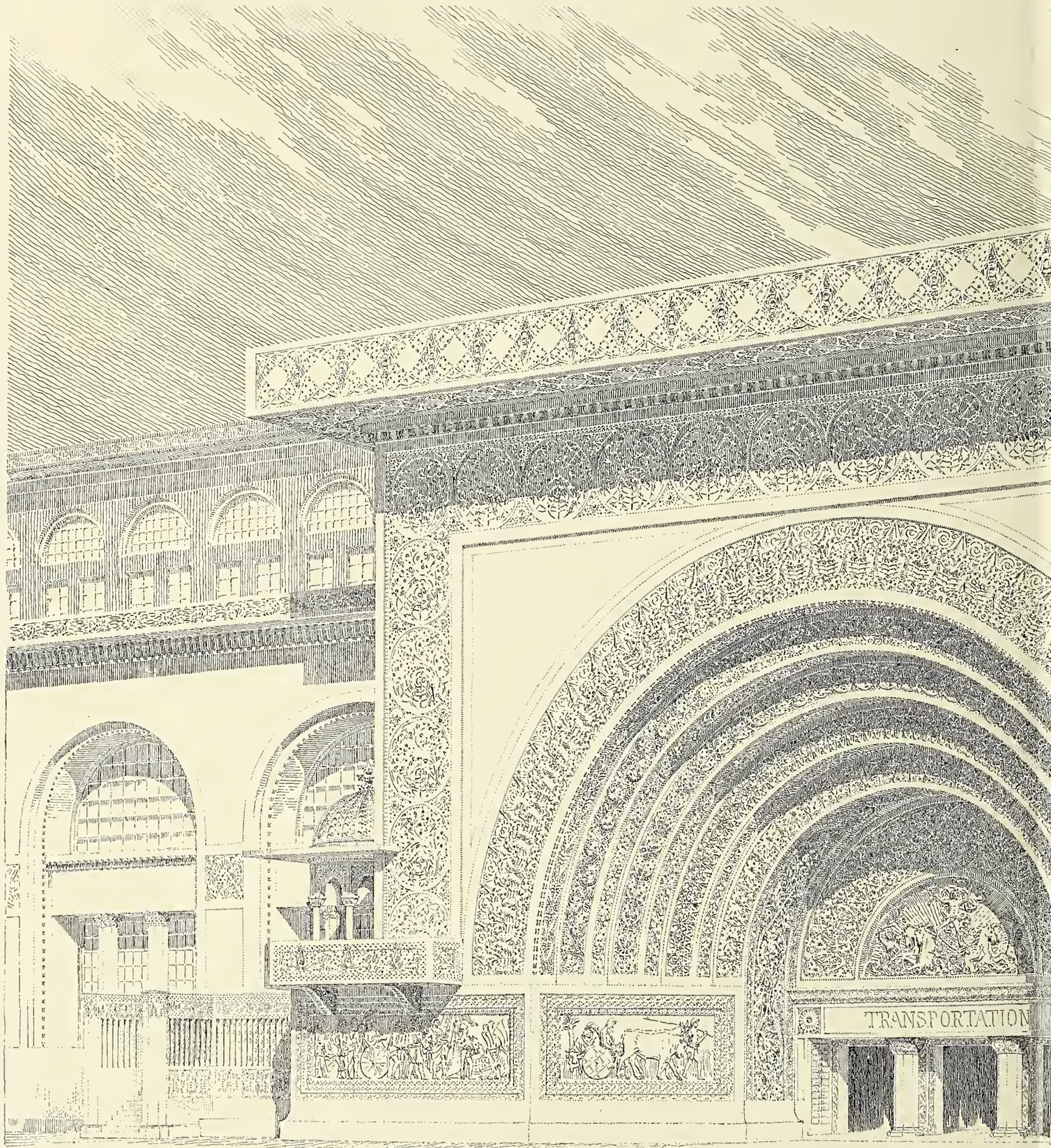
E. G. W. Dietrich, Architect, New York.



Inland Architect Press

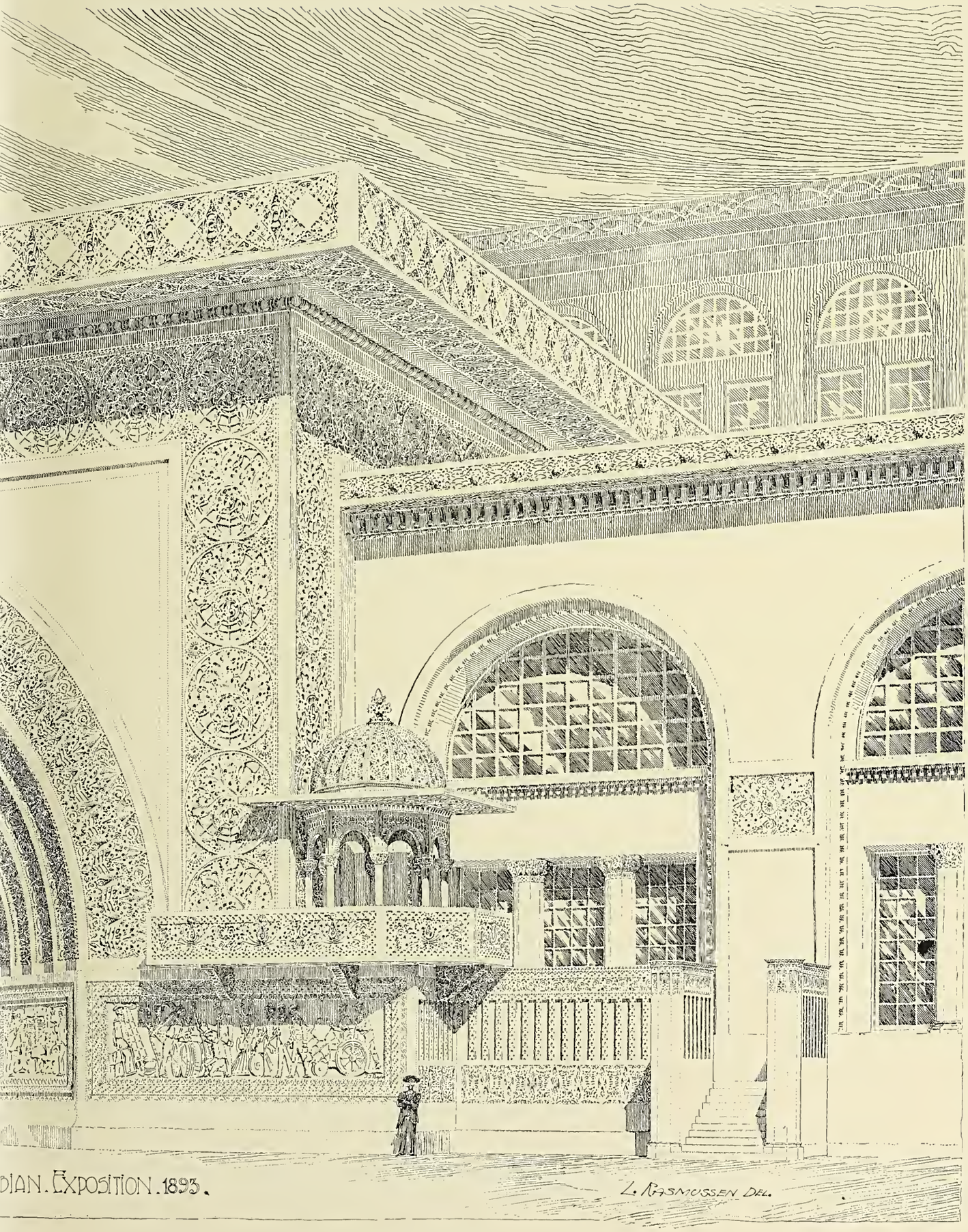
RESIDENCE OF THOMAS E. JONES, SCRANTON, PENNSYLVANIA.

E. G. W. Dietrich, Architect, New York.



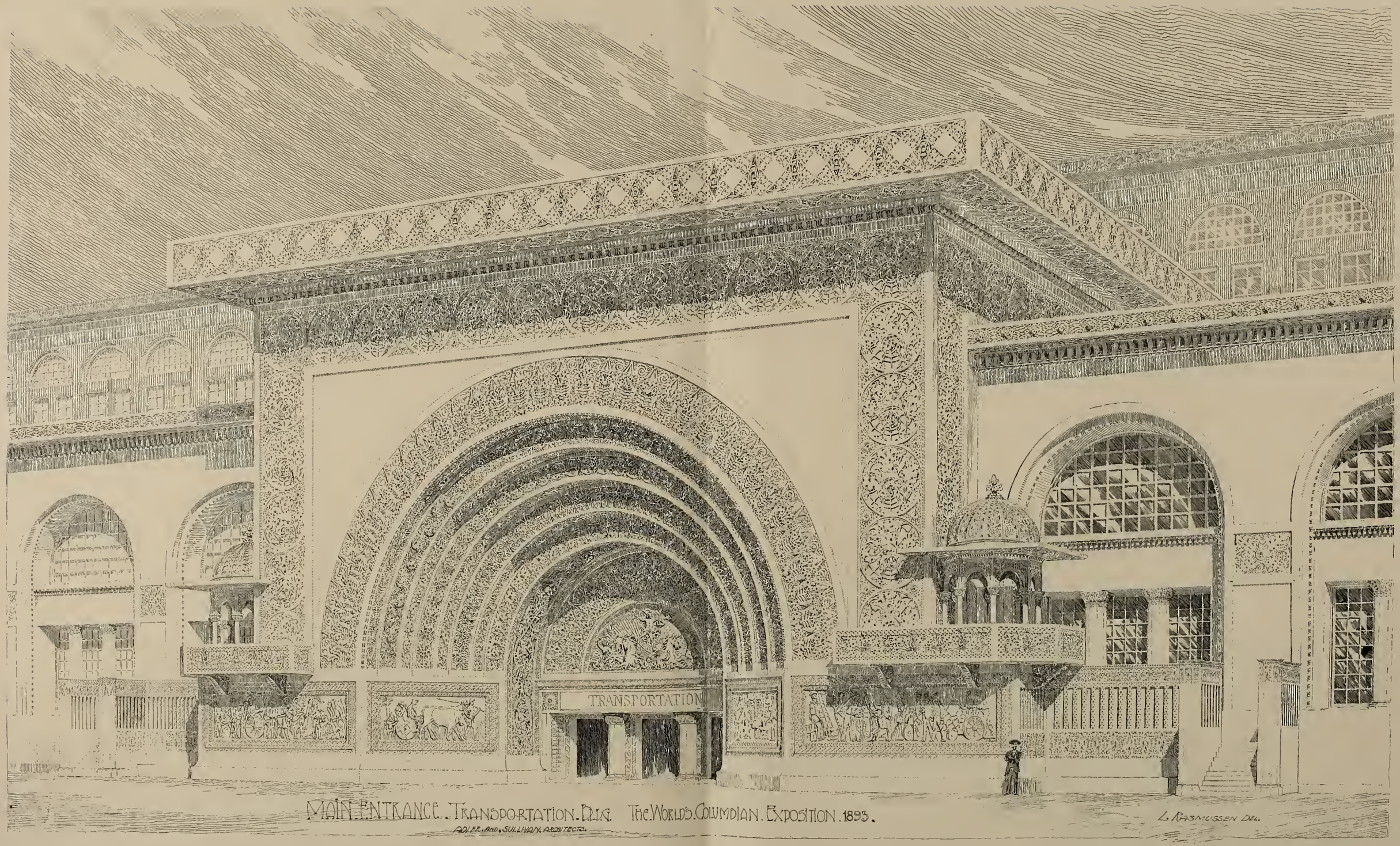
MAIN ENTRANCE. TRANSPORTATION. BLDG. THE WORLD'S COL

ADLER & SULLIVAN, ARCHITECTS.



DIAN. EXPOSITION. 1893.

L. RASMUSSEN DEL.



MAIN ENTRANCE. TRANSPORTATION. BLDG. THE WORLD'S COLUMBIAN EXPOSITION. 1893.

ADLER AND SULLIVAN, ARCHITECTS.

STEAM HEATING—RETURN TO BOILER.

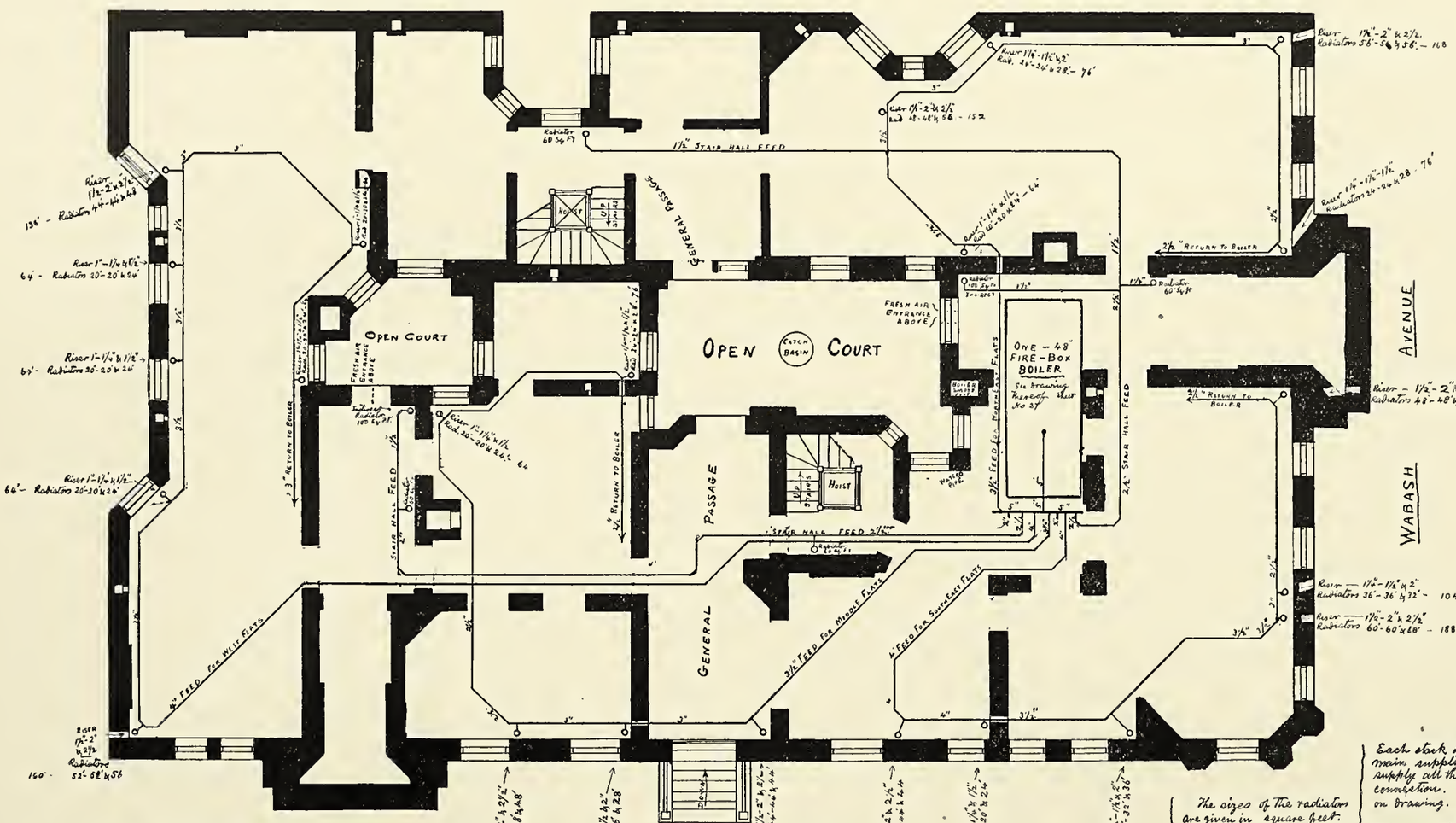
PLATE X.

BUILDING
FOR
J. H. CLOUGH
N.W. Corner Wabash Avenue & 25th Street
CHICAGO ILLINOIS

SHEET No. 26.

BASEMENT-PLAN
SHOWING
STEAM-FITTING
SCALE 1/4"

WILLETT & PAGNLEY
ARCHITECTS
107 DEARBORN STREET
CHICAGO.



There is a basement & 3 stories in this building

The basement is to contain one boiler & also the horizontal steam mains, but no radiators.

The 3 stories above basement have 4 separate flats to each floor, so that there may be said to be 4 stacks of flats, each stack being 3 stories high. The stacks of flats are, for distinction, named as follows.

North East flat front on Wabash avenue at N.E. corner of building.

South East Flats are at the street corner ~~& front~~ of building & front on both Wabash Avenue & 25th St.

The Middle Flats front on 25th street & adjoin the South East Flats.

The West flats front on 25th street & extend along the whole of the west side of building.

Each stack of flats has a separate horizontal main supply from boiler header. These mains supply all the radiators in the flats by a one pipe connection. The sizes of these mains are noted on drawing.

The sizes of the risers from the mains are given & also the sizes of the radiators attached thereto, beginning with the 3rd story & proceeding downwards.

There are also two separate main feeds for stair case halls. Each of these feeds supply two direct & one indirect radiators. These stair case radiators are to be worked on the two pipe system & therefore will have separate returns which will be one size smaller than the feeds.

Put up header, with all the outlets as shown. The header shall have plugs on each end

Put 4"x8" black japanned registers to all outlet flues from every story, including basement, except kitchen flues & those having grates. These flues all pass through roof & are shown on Roof plan. Each flue has but one register except the three large flues (each about 2'.0" square) which have 4 registers each. These registers are to be put in the flue close to the floor. There are 100 of these registers needed in all.

The sizes of the radiators are given in square feet.

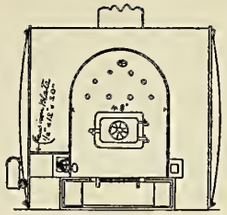
Where pipes pass through the "General Passage" they shall be clothed with mineral wool the same as if they contained water.

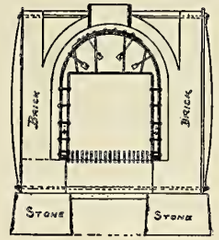
There are some brick partition walls (in basement) 8" thick which are not shown on this drawing, through which pipes must pass.

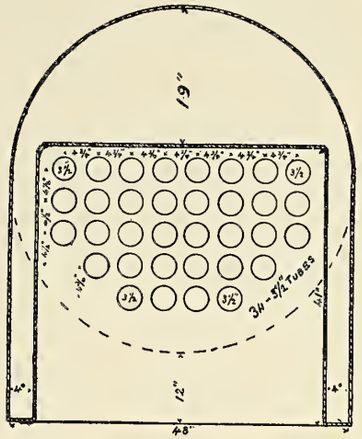
The radiators shall be red japanned & shall be tipped with bronze.

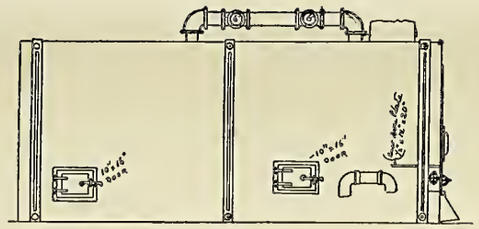
STEAM-HEATING BOILER.

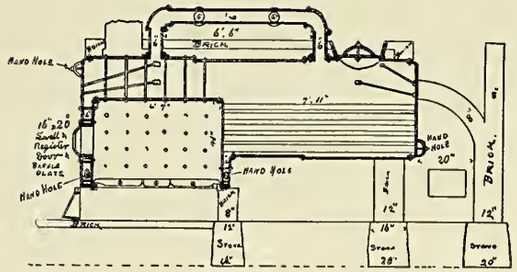
PLATE XII.

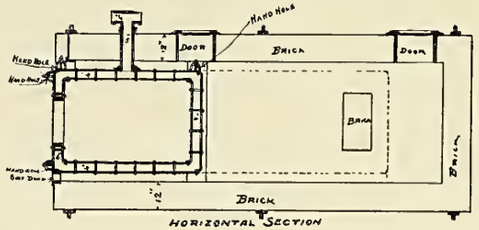




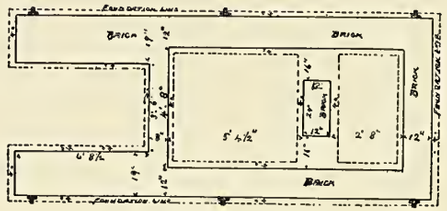








HORIZONTAL SECTION



PLANOF SETTING

There shall be one boiler like this, set up complete in place ready for immediate, convenient & effective use, all of the best materials workmanship & arrangement.

Cast iron shall not be used in the boiler except for doors

Each & every sheet in used in the construction of the boiler shall be flange steel. stamped with makers name and the quality and tensile strength thereof, which strength shall be 50,000 lbs per sq inch. Fire heads shall be 3/8.

The shell 5/8 and Fire box 5/16. Boiler tubes shall be the standard tubes.

Heads of boiler etc, must be braced and stayed, in the most thorough manner, both door and blow tubes etc.

All pipe openings into, or out of, boiler shall han extra heavy iron flanges riveted on.

Man-holes, where possible shall be 12"x16" or as near to that as can be, reinforced with heavy plate at least 1" thick, furnished with crabs, bolts and nuts, all complete with seatings faced.

Put hand-hole where shown

Furnish and put up all liners, grate bracers, anchors, ties, stays, wall binders, bolts, soot and other doors, coming bars and all other necessary and usual matters. The grates shall be Rocking grates Kirwood pattern all complete in every respects.

The boiler will be tested to 100 lbs hydraulic pressure per square inch

The longitudinal seams shall be double riveted & the single seams single-riveted

At the earliest moment & before work on the boiler has been commenced, the Contractor shall notify the Architects of the address of the shop where ~~they are being~~ made it is to be made.

The boiler will be thoroughly examined, inspected & tested by the Architects, or by some one appointed by them. The Contractor shall supply all needed help & facilities for the thorough examination & testing thereof.

It is intended, by the Architects, to employ a boiler expert. The Contractor shall embrace & include in his bid & contract the sum of ten dollars per boiler, to pay a boiler expert, & also the necessary travelling expenses to & from Chicago. The total amount will be deducted from the contract price

The boiler shall not be painted until after it has been tested & accepted. The painting of the boiler before these have been done, will of itself, be sufficient cause for rejection.

All the masonry shall be done by the Contractor. The foundations & up to one foot above the level of ash-pit shall be laid in cement mortar. Above this line mortar be used.

Pave ash pit with hard-burned sewer brick laid on edge in sand & grouted with hydraulic cement

BUILDING FOR
J. H. CLOUGH
N.W. COR. WABASH AVE AND 25TH ST
CHICAGO
ILLINOIS

SHEET No 27.

BOILER — 48"

WILLETT & FRAGLEY
ARCHITECTS
107 DEARBORN ST
CHICAGO ILL

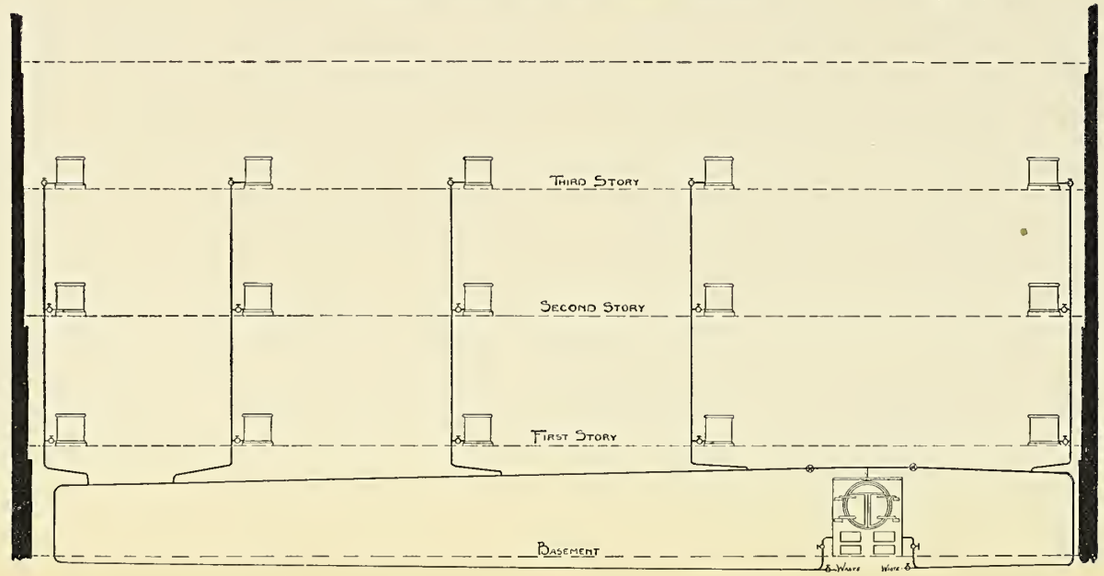
Put up smoke blue connection at least 26" diameter, of 1/4 sheet wrought iron.

Put ~~up~~ down cast iron plate at least 3/4" thick & 1'. 6" square in front of ~~each~~ boiler.

STEAM HEATING — RETURN TO BOILER.

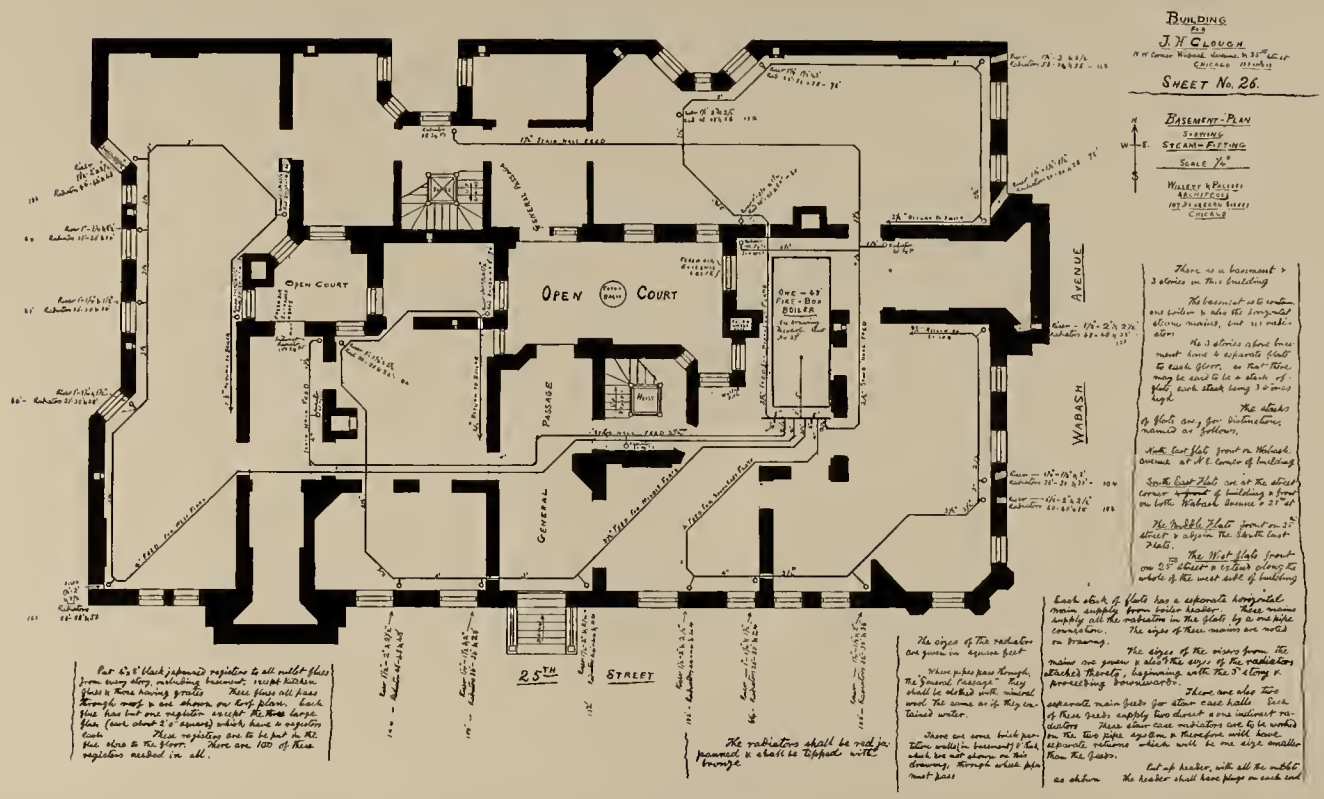
Vertical Section, Showing Steam Heating.

PLATE XI.



STEAM HEATING—RETURN TO BOILER.

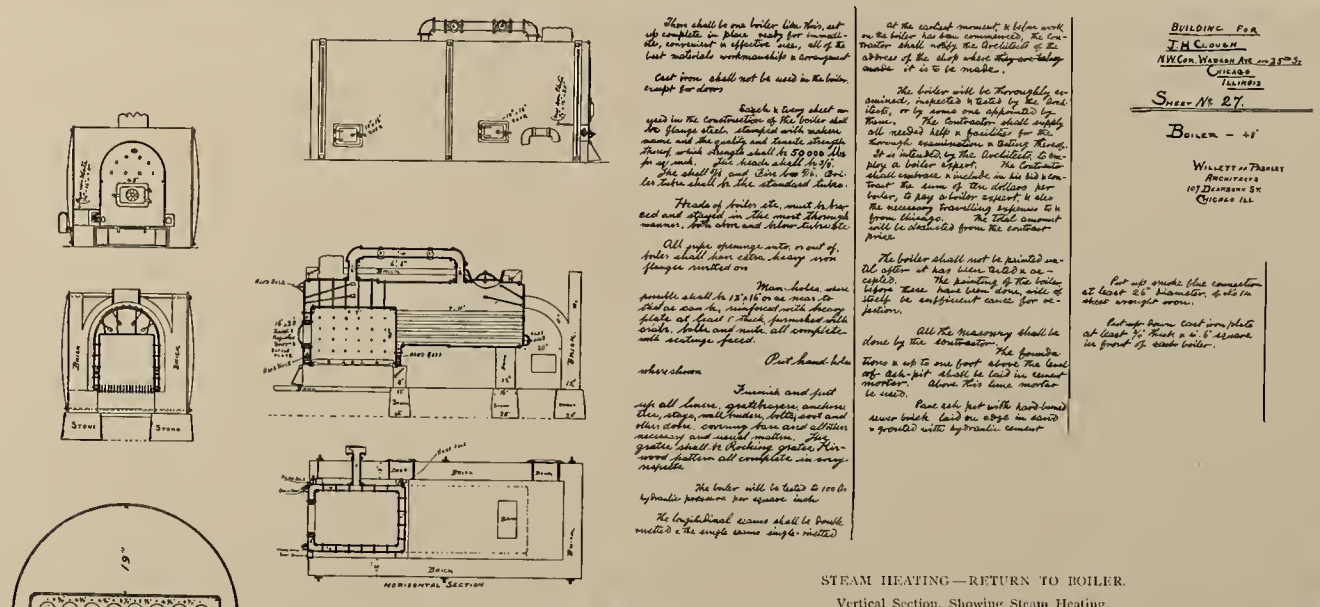
PLATE X.



STEAM-HEATING BOILER.

PLATE XII.

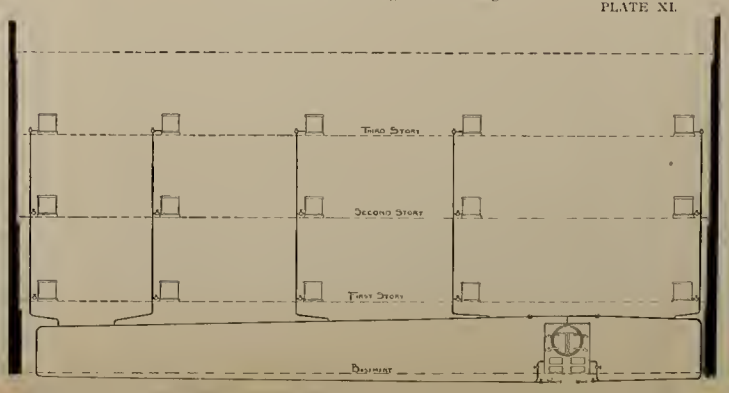
JANUARY 1ST 1889



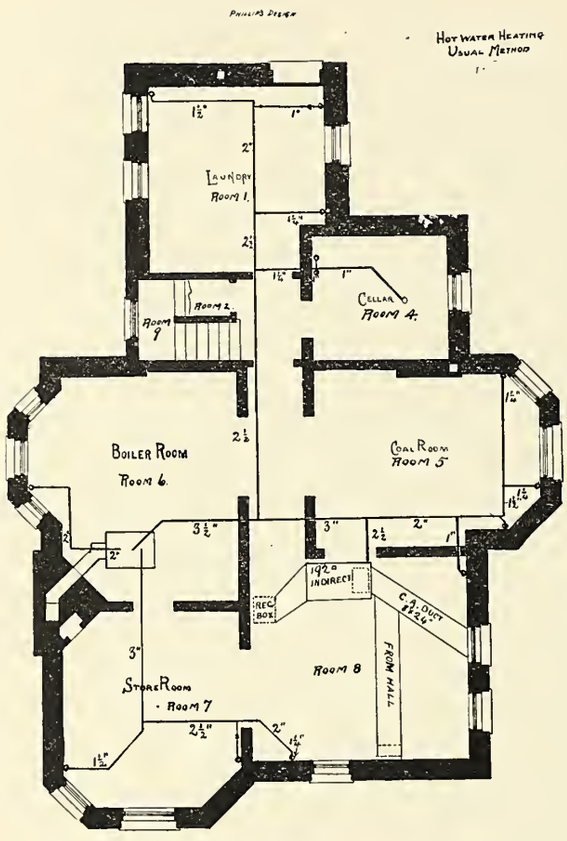
STEAM HEATING—RETURN TO BOILER.

Vertical Section, Showing Steam Heating.

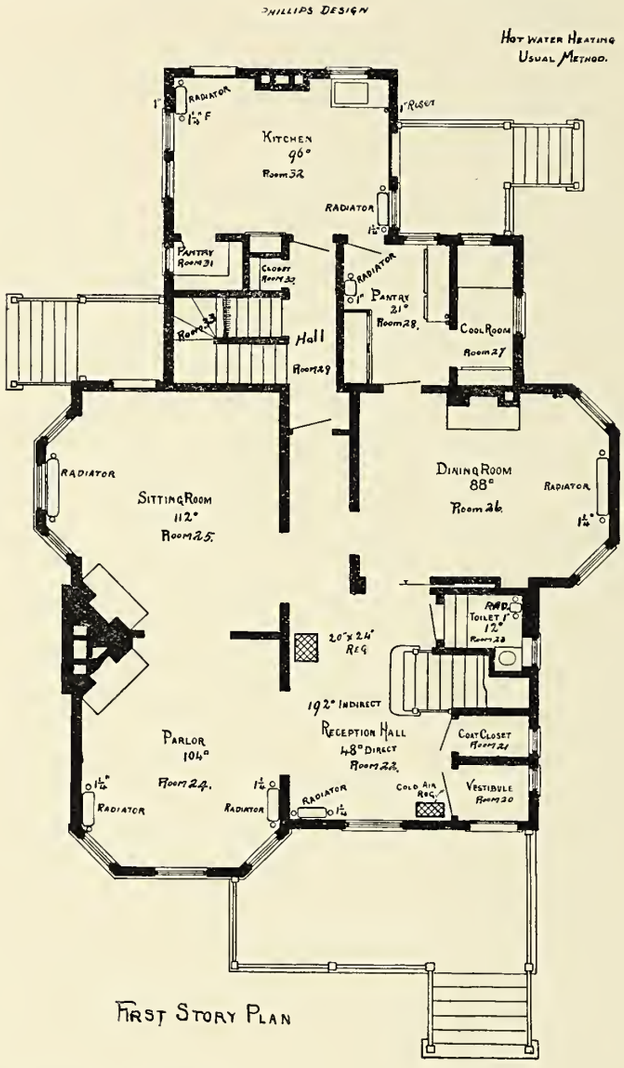
PLATE XI.



HOT-WATER HEATING—USUAL METHOD. PLATE VII.

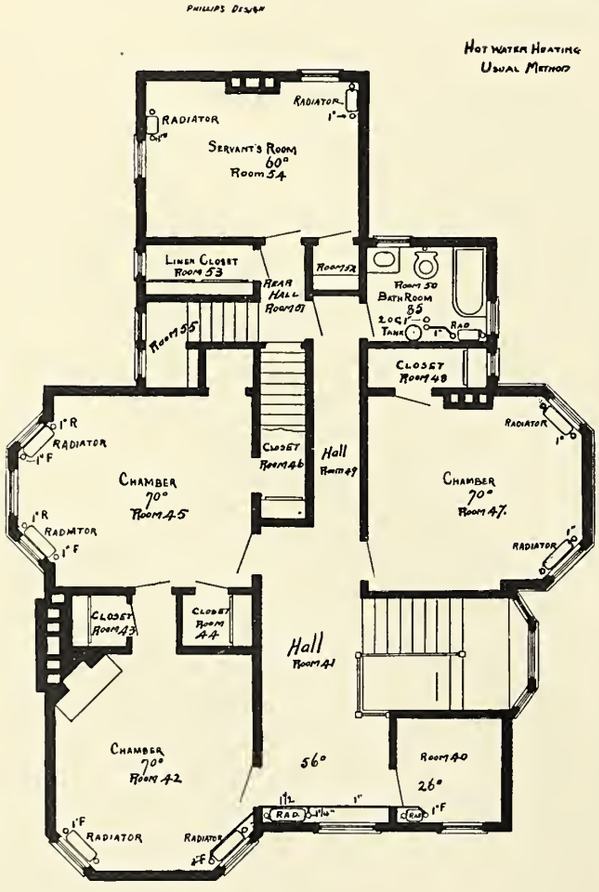


BASEMENT PLAN

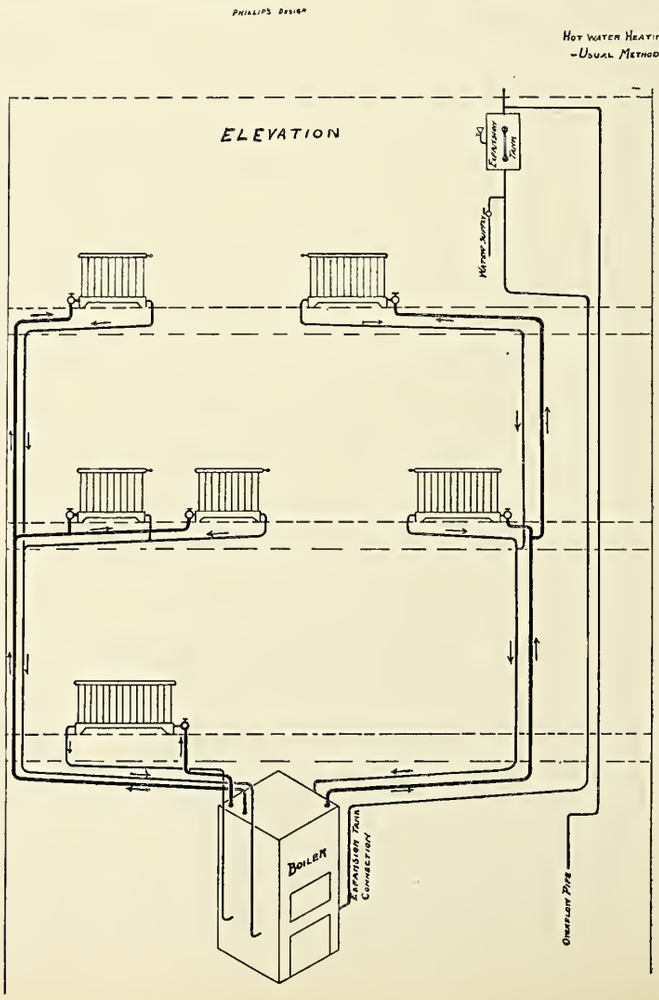


FIRST STORY PLAN

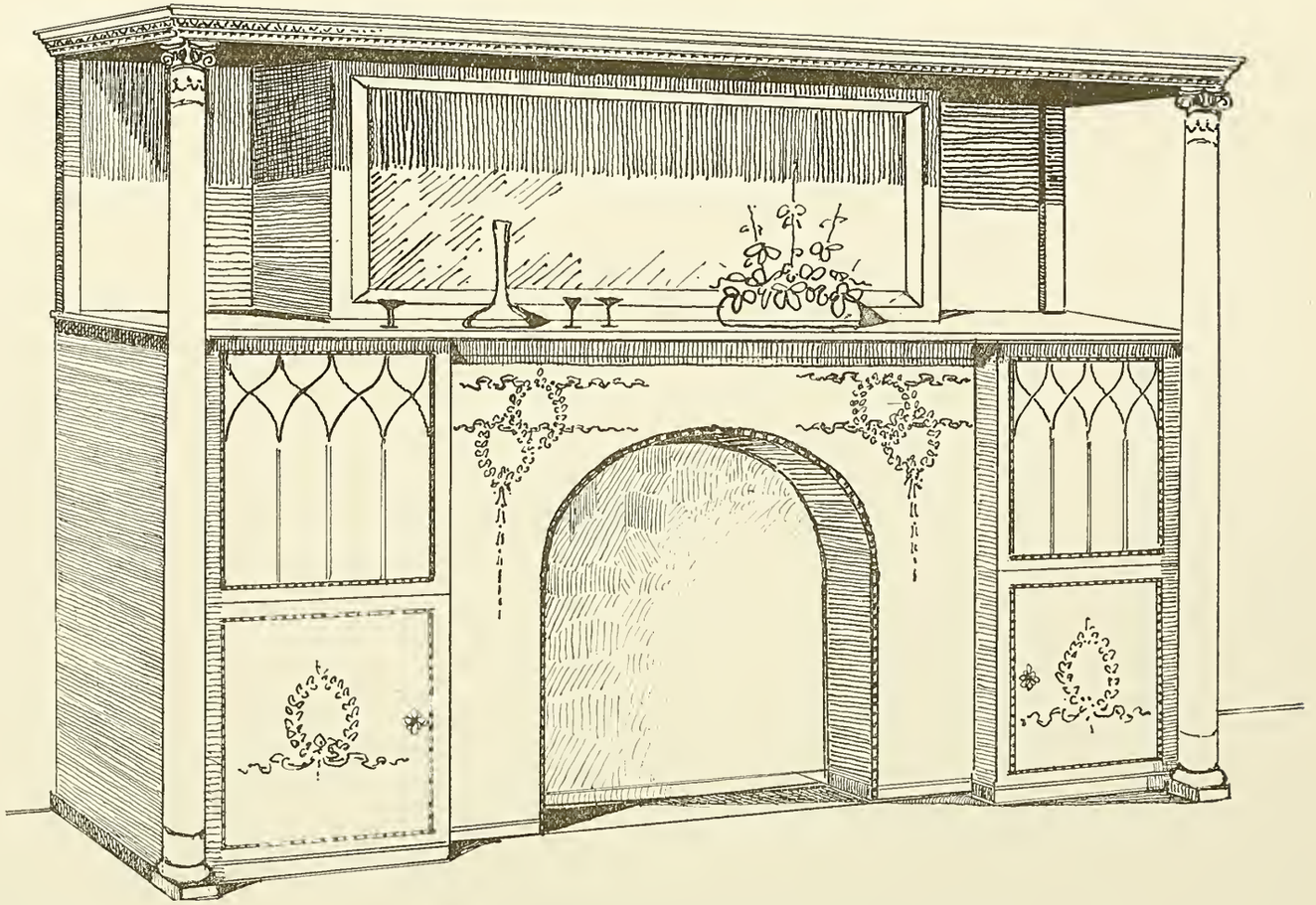
HOT-WATER HEATING—USUAL METHOD. PLATE VIII.

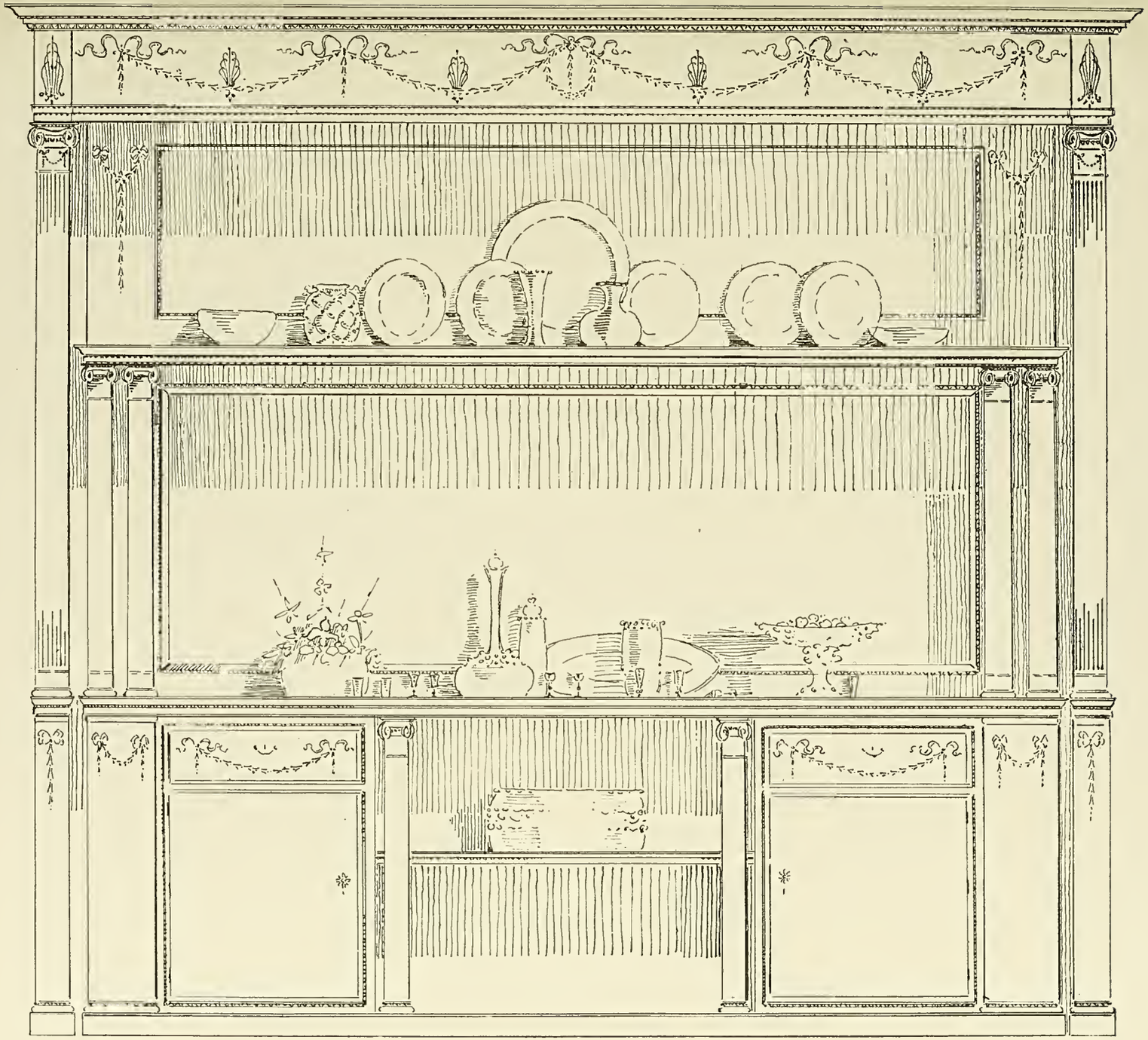


SECOND STORY PLAN









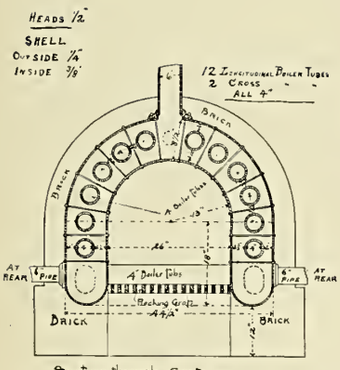
CLASSICAL DESIGNS IN FURNITURE, BY STEPHEN M. WIRTS, CHICAGO.

HOT-WATER HEATING.

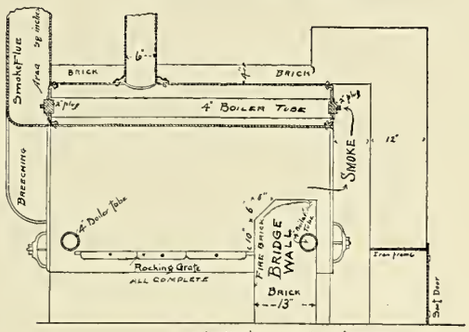
PLATE IX.

"SADDLE"
HOT-WATER
BOILER

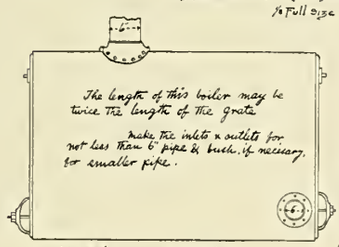
WILLETT & PASHLEY
ARCHITECTS
CHICAGO



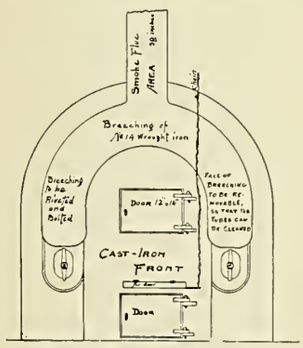
Section through Grate — 1/8 Full size



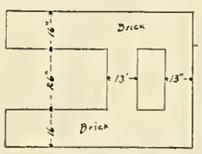
Longitudinal Section through Center
1/8 Full size



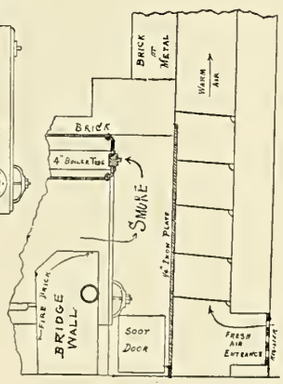
Side Elevation of Boiler
1/8 Full size



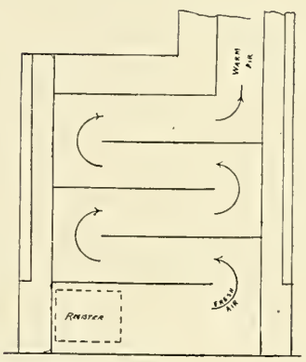
Front Elevation of Boiler



Plan of Brick Work

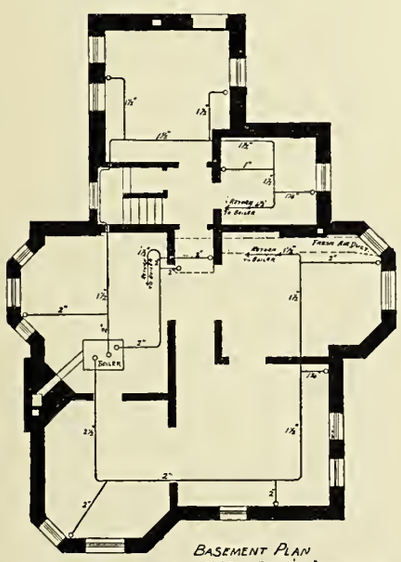


FRESH AIR FLUE WHEN ATTACHED TO BOILER

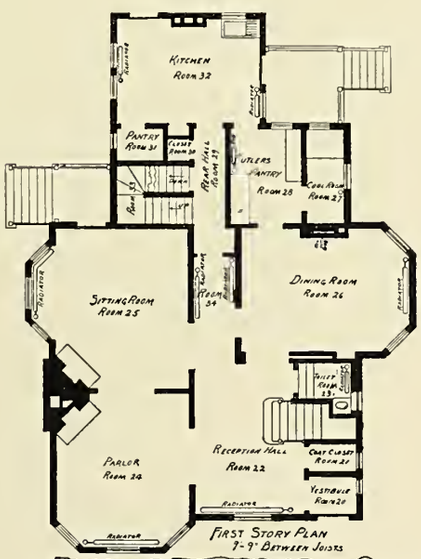


STEAM HEATING—RETURN TO BOILER.

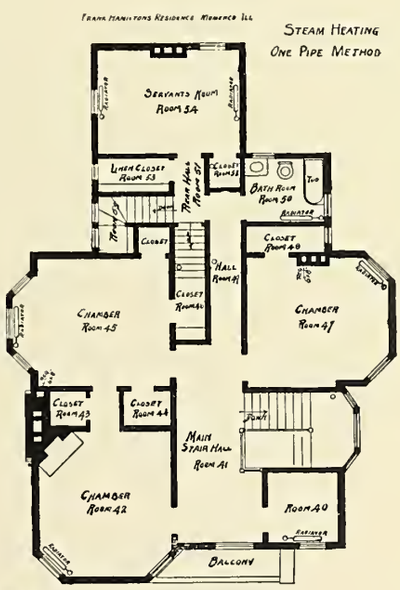
PLATE XIII.



Basement Plan
7'-6" from floor to joists



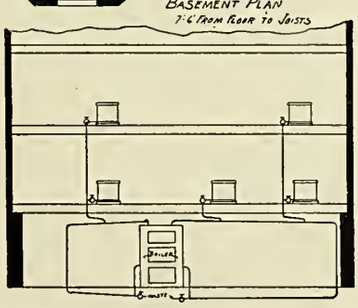
First Story Plan
9'-9" between joists



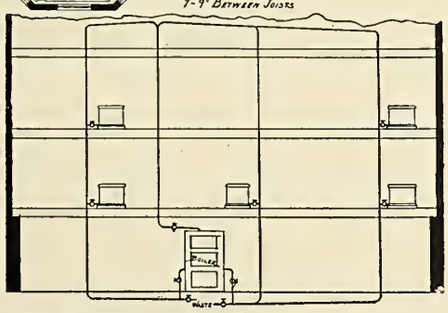
Second Story Plan
9'-3" between joists

Steam Heating
One Pipe Method

Scale
Plans, 1/8" = 1'-0"
Sections, No Scale.



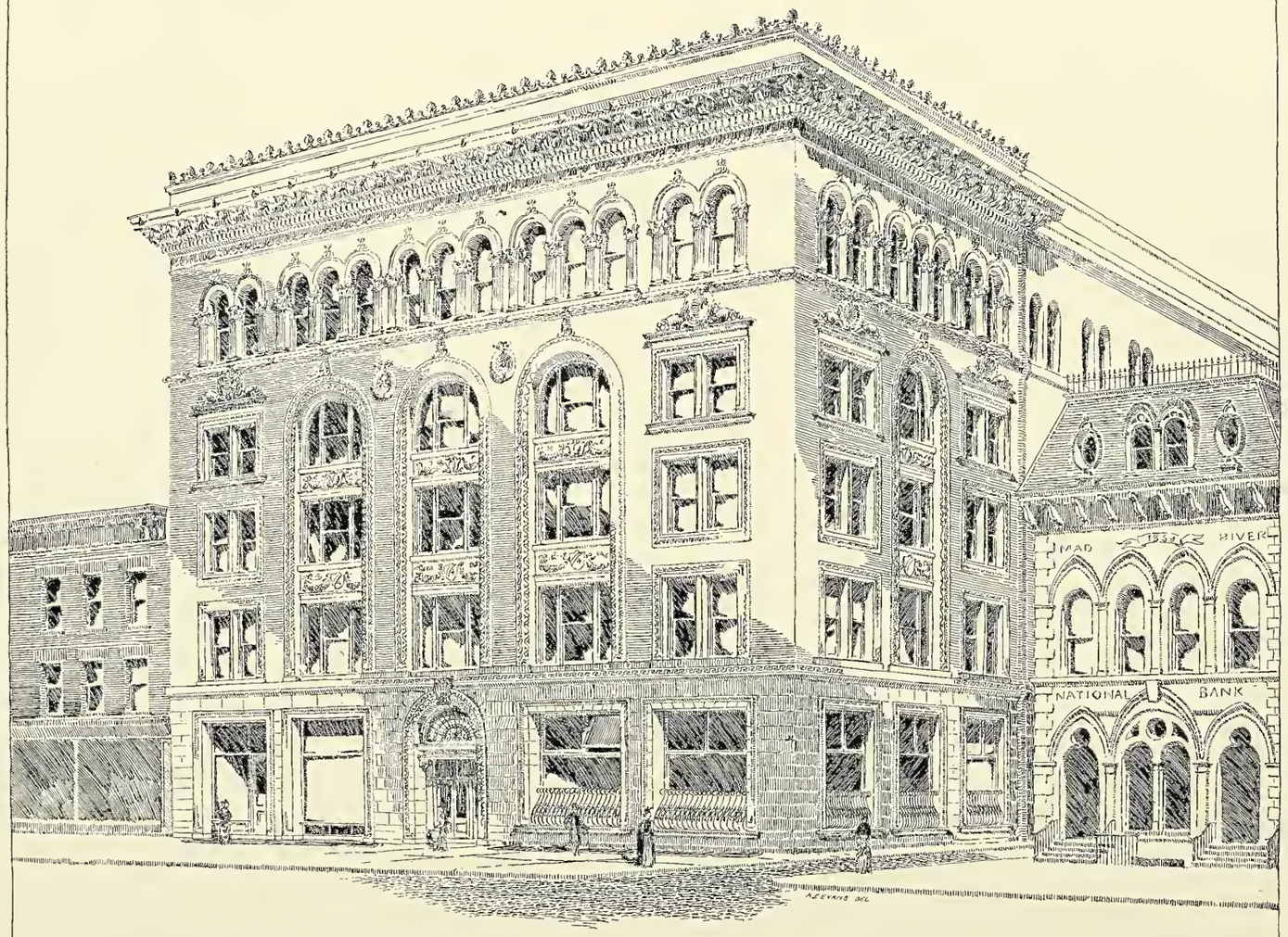
First Section. — Ordinary Method



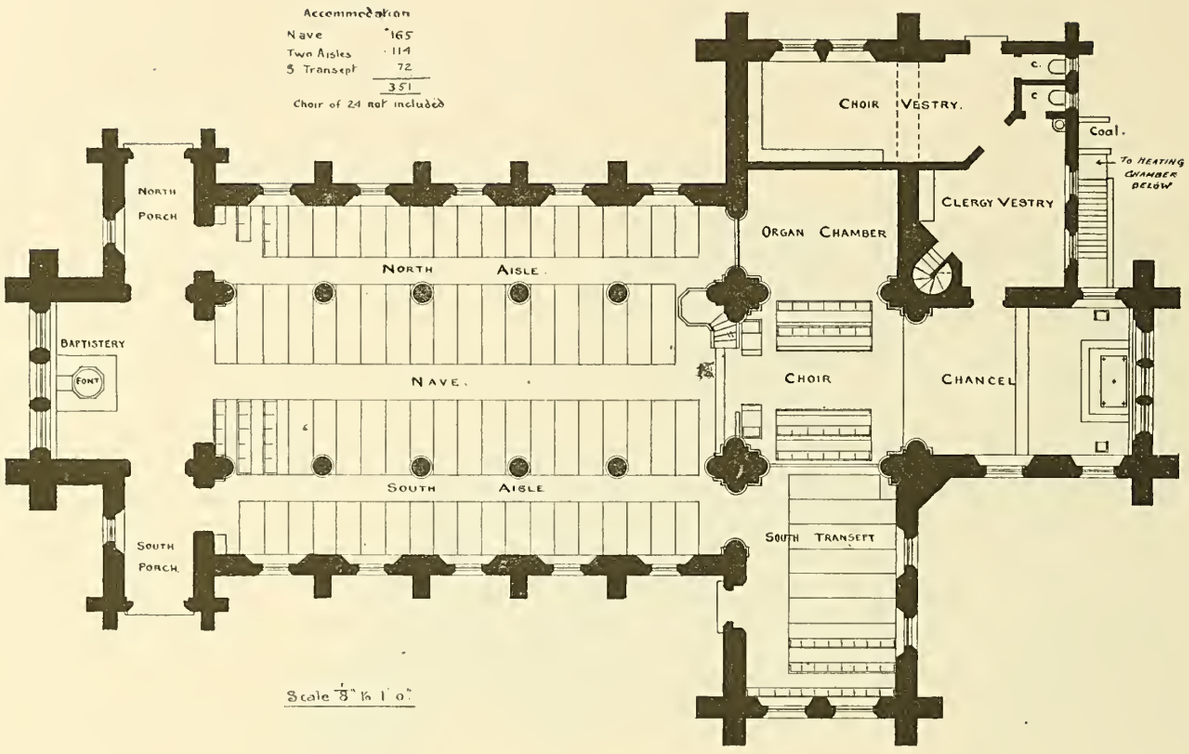
Second Section. — Overhead Method

Bushnell Building

Springfield Ohio.



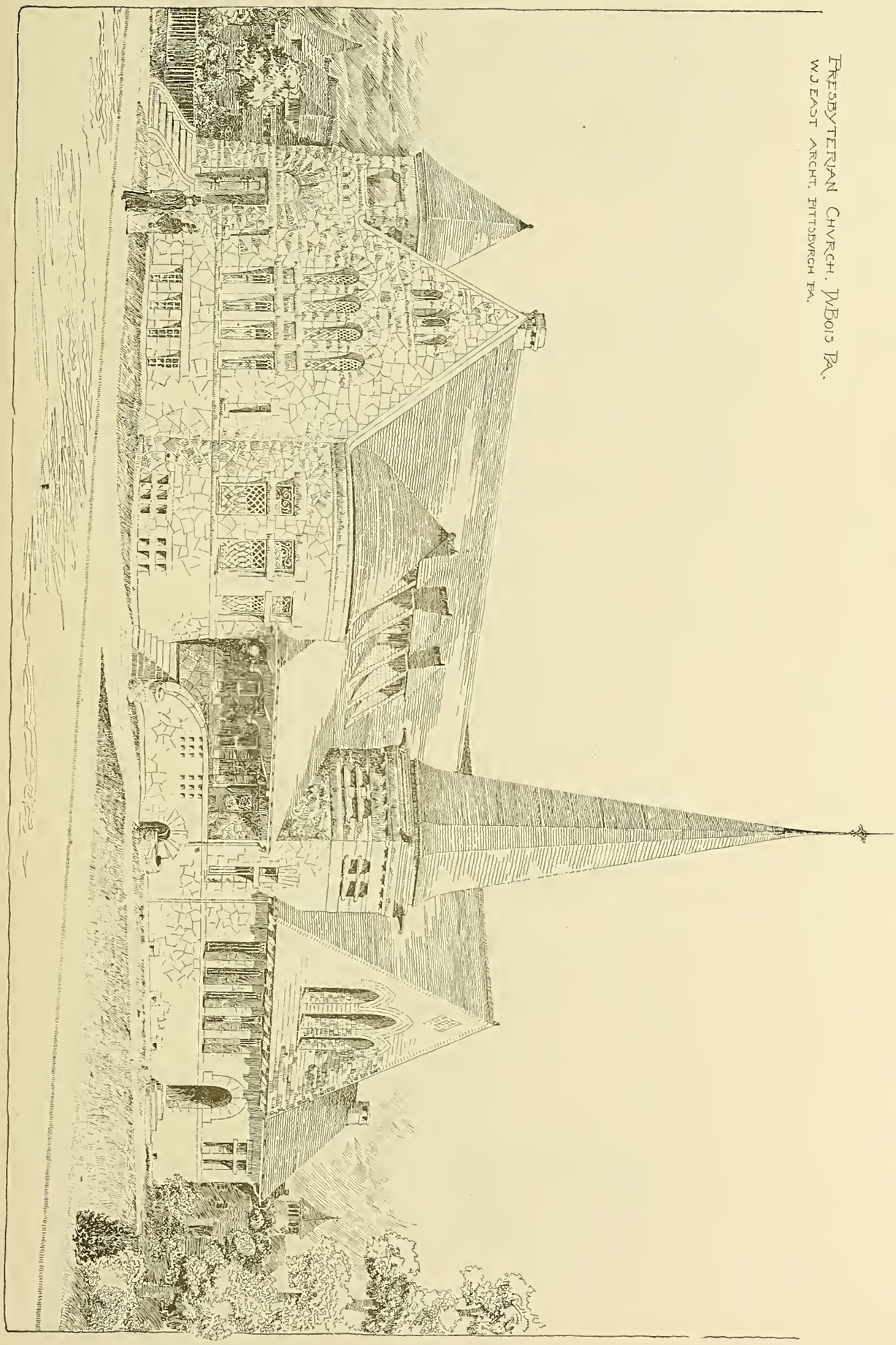
Shepley Rutan & Coolidge, Arch'ts.



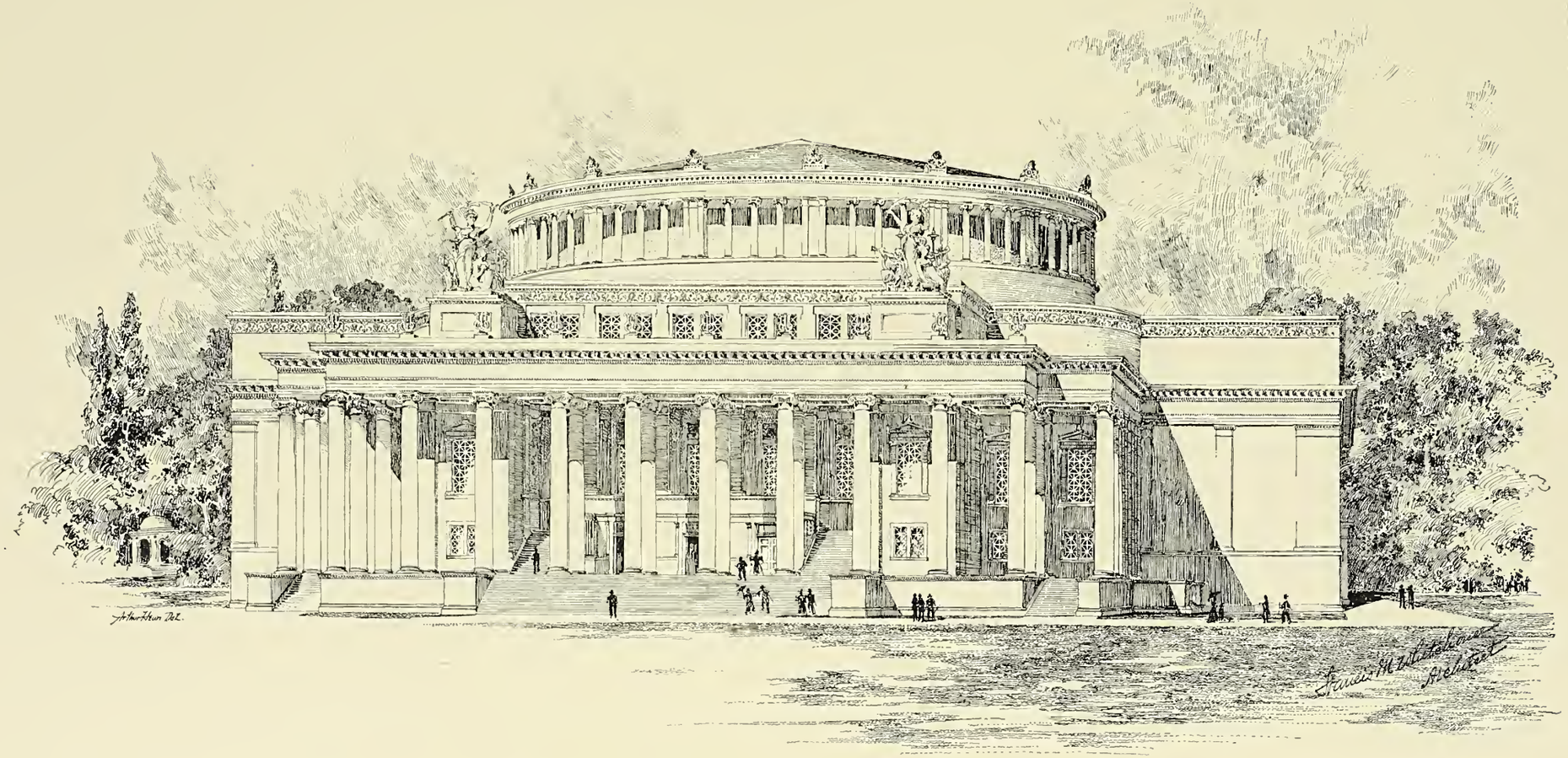


DENVER ARCHITECTURAL SKETCH CLUB COMPETITION. A VILLAGE CHURCH IN THE THIRTEENTH CENTURY ENGLISH GOTHIC STYLE, TO SEAT 350 PERSONS.

FIRST-PLACE DESIGN BY HARVEY PRIDHAM.

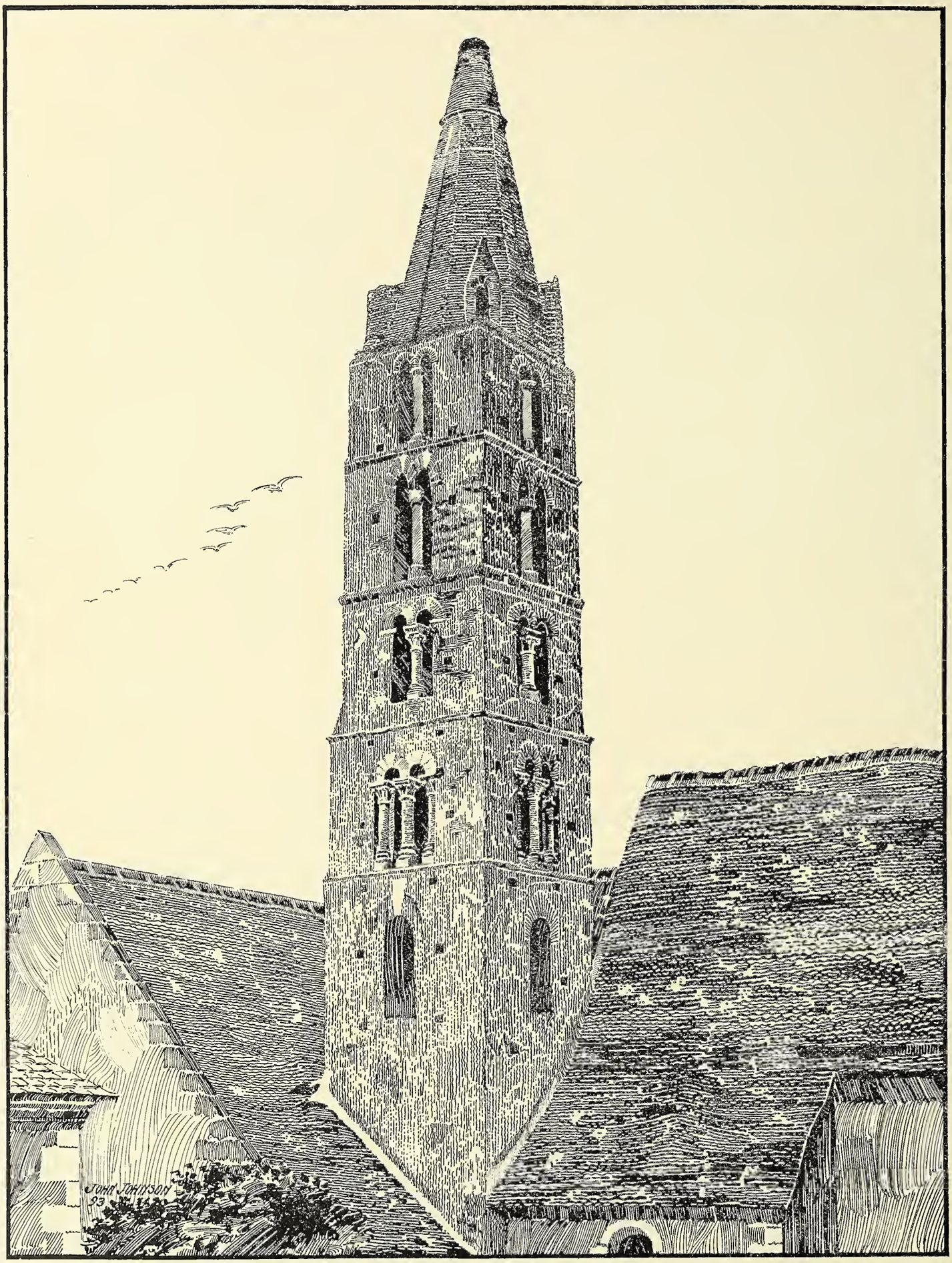


PRESBYTERIAN CHURCH, DuBOIS PA.
W.J. EAST ARCHT. PITTSBURGH PA.



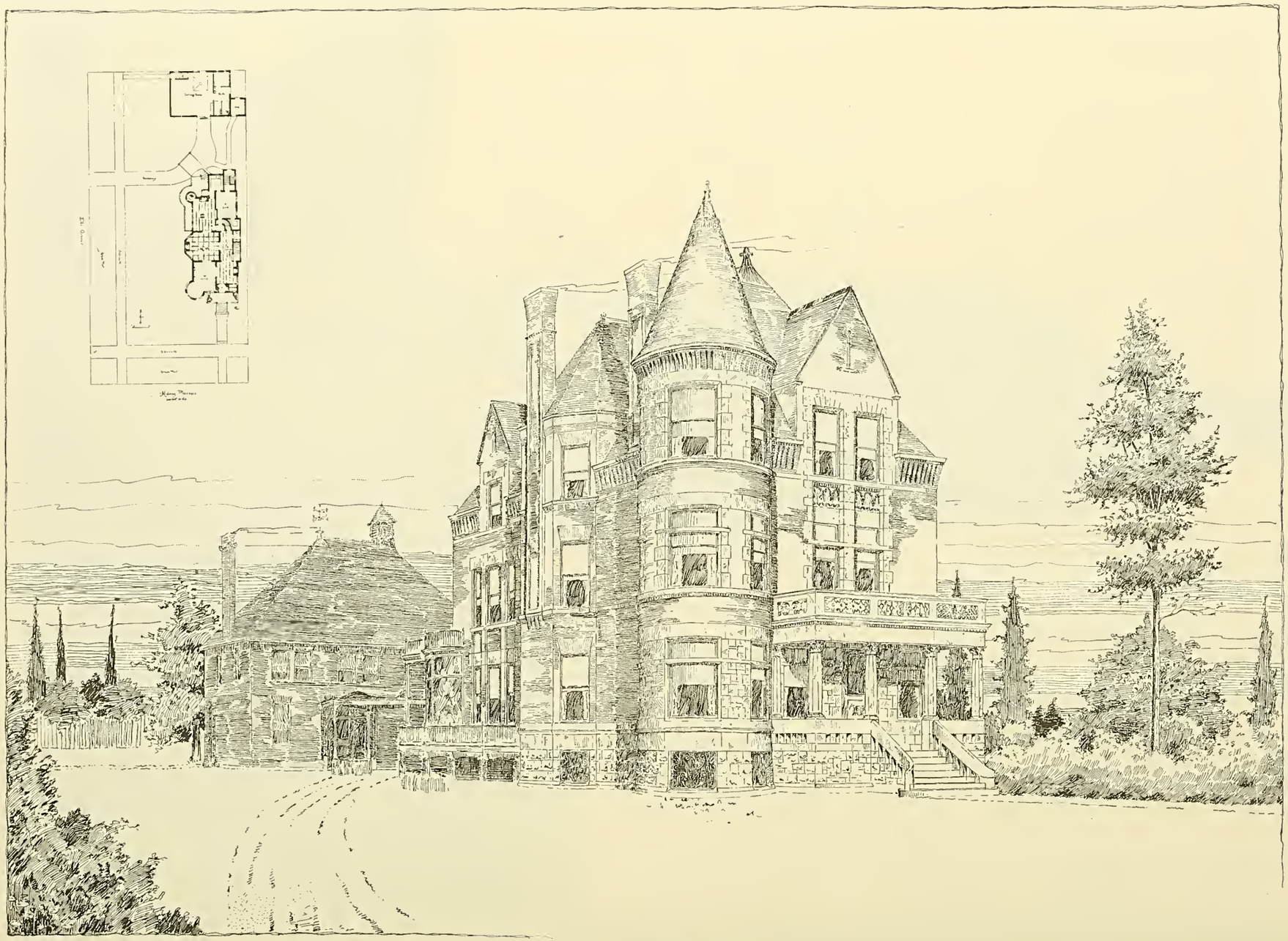
ORIGINAL DESIGN FOR FESTIVAL HALL, WORLD'S COLUMBIAN EXPOSITION, CHICAGO.

FRANCIS M. WHITEHOUSE, ARCHITECT.



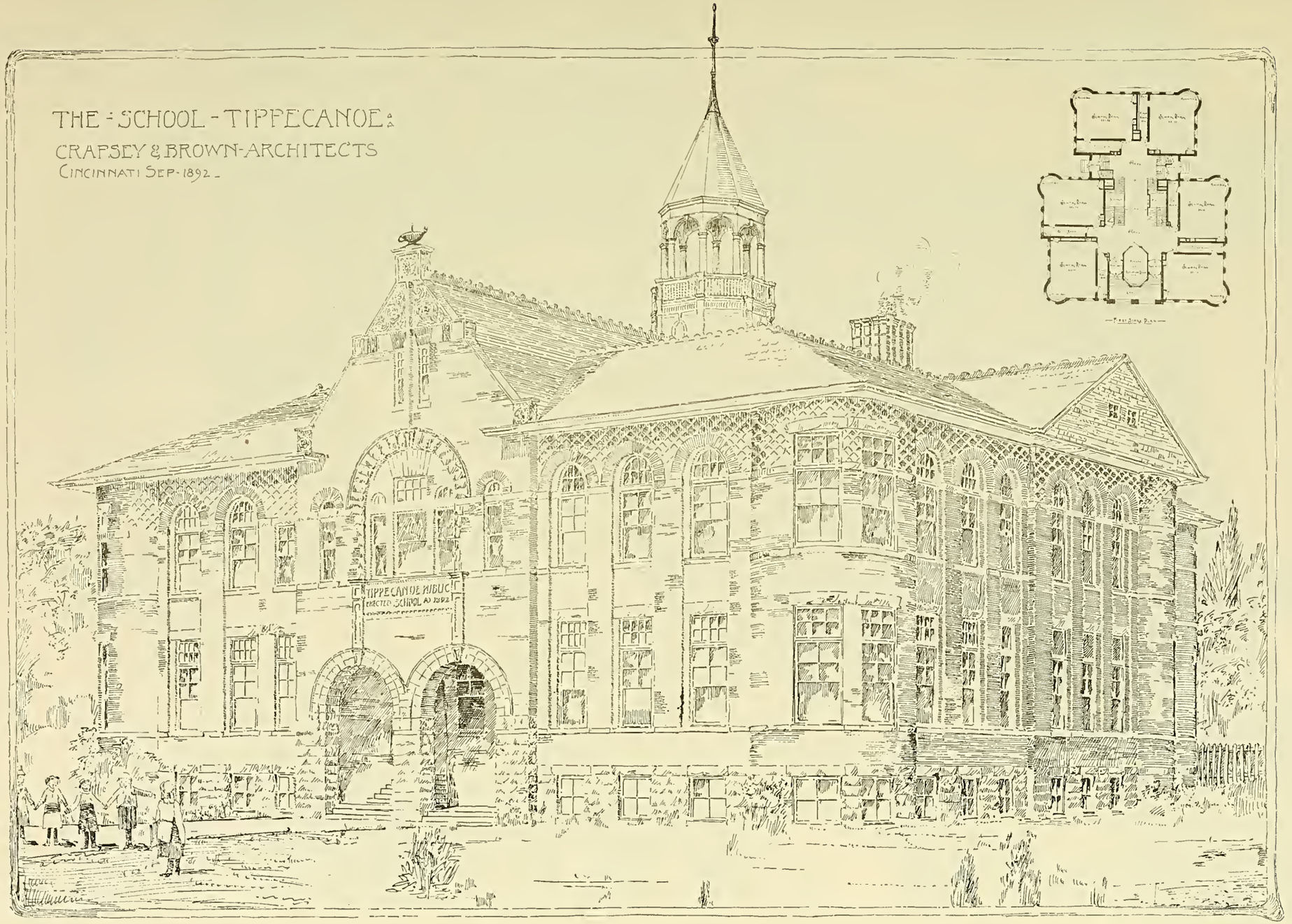
CHURCH TOWER IN TRUYES, FRANCE.

DRAWN FROM PHOTO BY JOHN JOHNSON, CHICAGO.



HOUSE FOR R. CHESTER FROST, CHICAGO.

WILLIAM D. COWLES, ARCHITECT.


THE - SCHOOL - TIPPECANOE.
CRAPSEY & BROWN-ARCHITECTS
CINCINNATI SEP-1892.
TIPPECANOE PUBLIC
ERECTED SCHOOL A.D. 1892



OLD HOUSE IN ANGERS, FRANCE.

DRAWN FROM PHOTO BY JOHN JOHNSON, CHICAGO.



THE PROPYLÆUM AT MUNICH.

ILLUSTRATING DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE, BY C. E. ILLSLEY. (FIG. 105.)



METROPOLITAN OPERA HOUSE, NEW YORK.

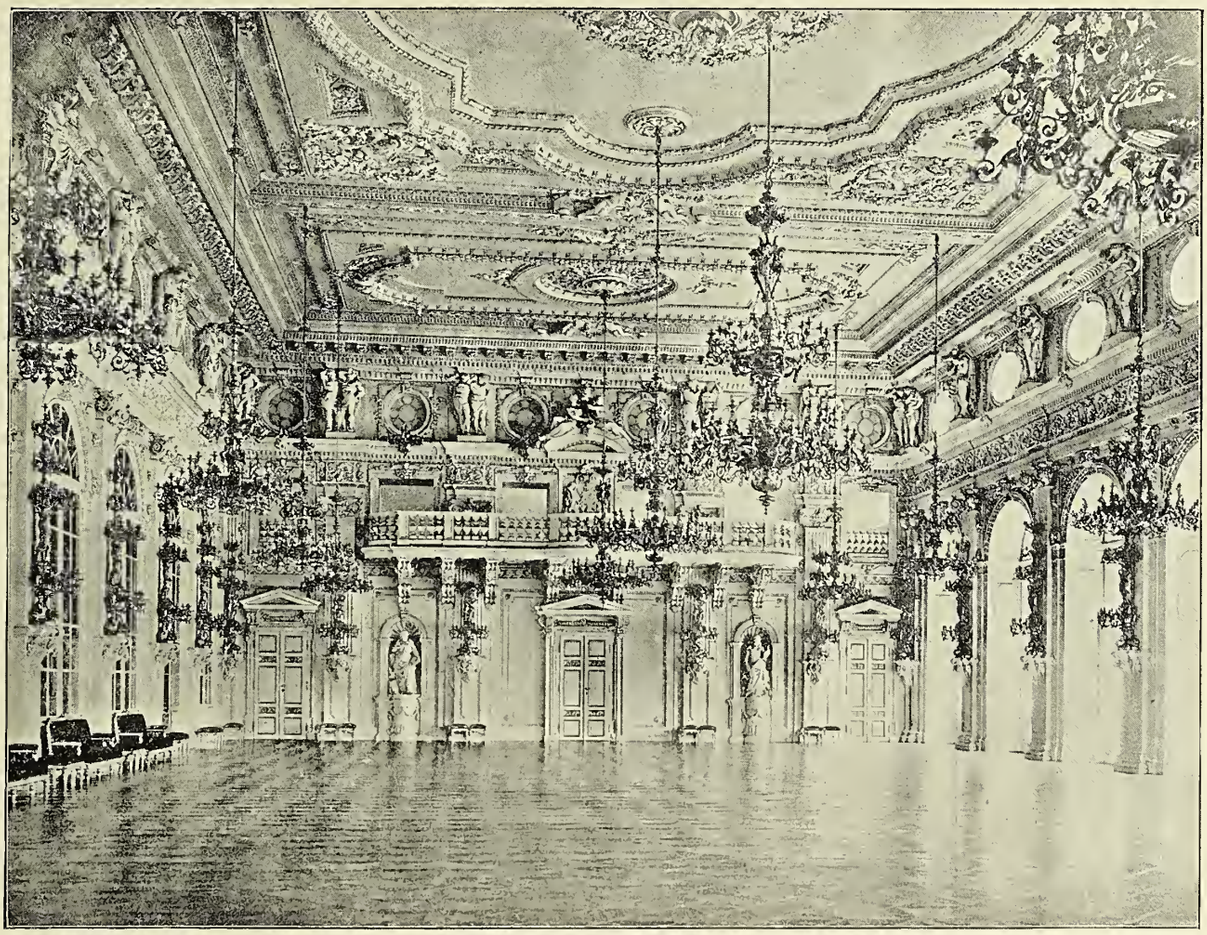
ILLUSTRATING DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE, BY C. E. ILLSLEY. (FIG. 104.)

RESIDENCE FOR MR G. ROUNSAVELL CHICAGO
FREDERICK W. PERKINS ARCHITECT



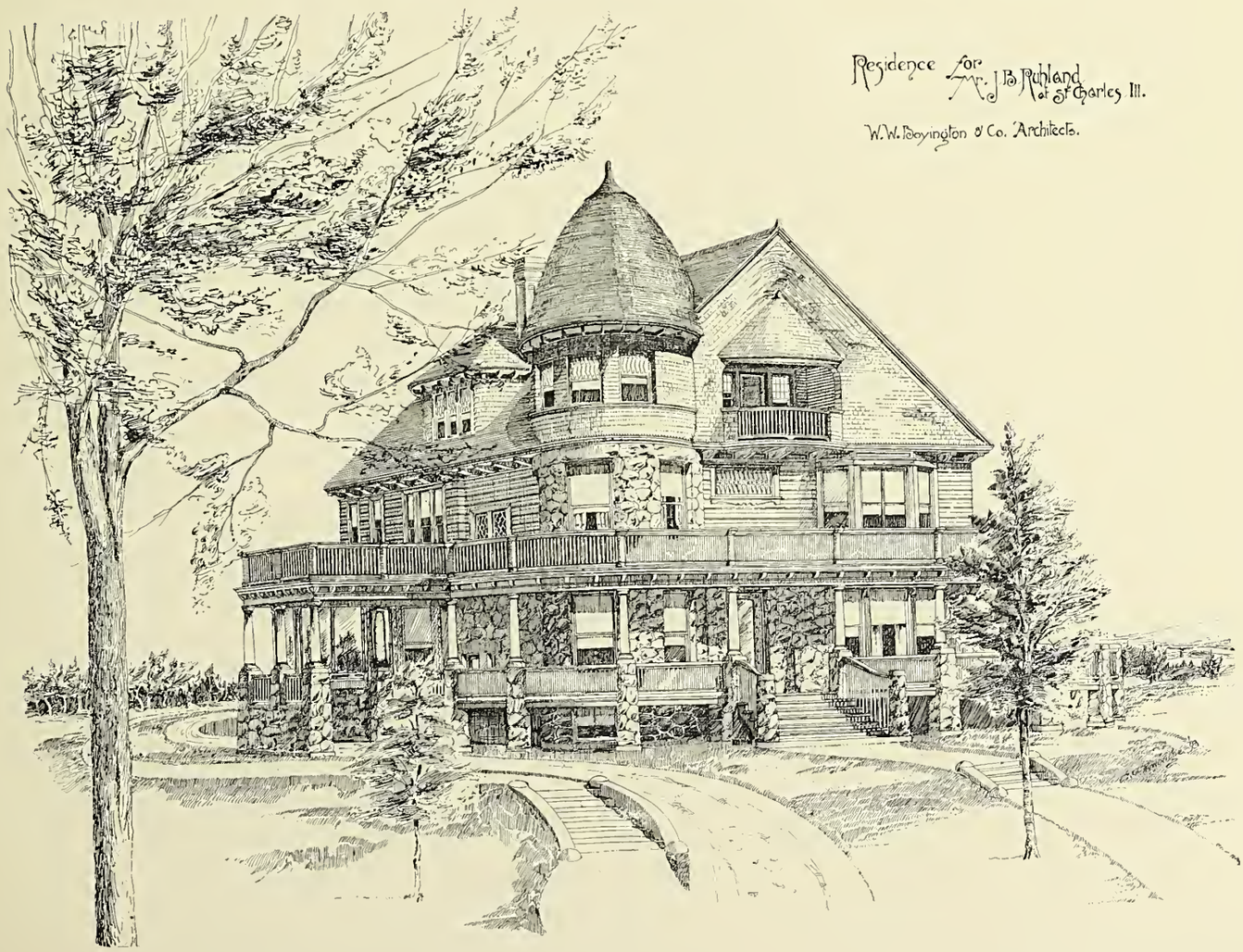
STATION AT ROCKFORD ILL.
CHICAGO AND NORTH WESTERN R'Y.
Charles S Frost Architect Chicago





SPANISH HALL, IMPERIAL PALACE, PRAGUE, GERMANY.

ILLUSTRATING DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE, BY C. E. ILLSLEY. (FIG. 108.)



THE INLAND ARCHITECT AND NEWS RECORD

Vol. XXI. JULY, 1893. No. 6



A Monthly Journal Devoted to

ARCHITECTURE,

CONSTRUCTION, DECORATION AND FURNISHING

IN THE WEST.

PUBLISHED BY THE INLAND PUBLISHING CO.,
19 Tribune Building, Chicago, Ill.

L. MULLER, Jr., Manager. ROBERT CRAIK McLEAN, Editor.
C. E. ILLSLEY, Associate Editor.

SPECIAL CONTRIBUTORS:

DANKMAR ADLER,	D. H. BURNHAM,	W. L. B. JENNEY,
HENRY VAN BRUNT,	P. B. WIGHT,	IRVING K. POND,
WM. PAUL GERHARD,	LOUIS H. SULLIVAN,	ALLEN B. POND.

TERMS: Regular number, $5 a year; Photogravure edition, $10 a year. Single copies, Regular number, 50c.; Photogravure edition (including 7 photogravures), $1. Advance payment required.

The columns and illustration pages of THE INLAND ARCHITECT are open to all alike, merit and availability only determining what shall be published. Contributions appropriate to its pages are always desired.

AMERICAN INSTITUTE OF ARCHITECTS.

OFFICERS FOR 1893:

PRESIDENT . . . . EDWARD H. KENDALL, New York, N. Y.
SECRETARY . . . . ALFRED STONE, Providence, R. I.
TREASURER . . . . SAMUEL A. TREAT, Chicago, Ill.

VICE-PRESIDENTS:

FIRST VICE-PRESIDENT . . DANIEL H. BURNHAM, Chicago, Ill.
SECOND VICE-PRESIDENT . HENRY VAN BRUNT, Kansas City, Mo.

BOARD OF DIRECTORS:

For three years.

Theophilus P. Chandler, Jr., Phila., Pa.	Joseph F. Baumann, Knoxville, Tenn.
George W. Rapp, Cincinnati, Ohio.	P. P. Furber, St. Louis, Mo.
William G. Preston, Boston, Mass.	R. W. Gibson, New York, N. Y.
*W. W. Clay, Chicago, Ill.	C. H. Johnson, St. Paul, Minn.

For two years.

*Richard M. Hunt, New York, N. Y.	C. F. McKim, New York, N. Y.
E. M. Wheelwright, Boston, Mass.	William Worth Carlin, Buffalo, N. Y.
*James W. McLaughlin, Cincinnati, O.	S. S. Beman, Chicago, Ill.
William S. Eames, St. Louis, Mo.	William C. Smith, Nashville, Tenn.

For one year.

W. M. Poindexter, Washington, D. C.	*George B. Ferry, Milwaukee, Wis.
C. J. Clark, Louisville, Ky.	George C. Mason, Jr., Philadelphia.
Levi T. Scofield, Cleveland, Ohio.	E. F. Fassett, Portland, Me.
M. J. Dimmock, Richmond, Va.	A. W. Longfellow, Boston, Mass.

*These, with President, Secretary and Treasurer ex-officio, form Executive Committee.

STANDING COMMITTEES FOR 1893:

Committee on Foreign Correspondence.—Richard M. Hunt, chairman, New York, N. Y.; William Le Baron Jenney, Chicago, Ill.; R. S. Peabody, Boston, Mass.; C. F. McKim, New York, N. Y.; Henry Van Brunt, Kansas City, Mo.

Committee on Education.—Henry Van Brunt, chairman, Kansas City, Mo.; Professor William R. Ware, New York, N. Y.; Professor N. Clifford Ricker, Champaign, Ill.; A. W. Longfellow, Boston, Mass.; Theophilus P. Chandler, Jr., Philadelphia, Pa.

Committee on Uniform Contract.—Samuel A. Treat, chairman, Chicago, Ill.; William Worth Carlin, Buffalo, N. Y.; Alfred Stone, Providence, R. I.

Committee upon Conservation of Public Buildings.—Richard Upjohn, chairman, New York, N. Y.; Presidents of the several Chapters.

Committee on Competition Code.—Charles E. Illsley, chairman, St. Louis, Mo.; J. W. Yost, Columbus, Ohio; J. G. Cutler, Rochester, N. Y.

Place of next Convention, Chicago, August, 1893.

Death of Colonel Richard T. Auchmuty.

It is given to but few men to inaugurate, lead and become so identified by years of devoted application to a great purpose as to stand as a synonym for that work, as the name of Col. Richard T. Auchmuty will always be held in regard to trade schools. His death, July 18, is beyond regret, but the foundations of his work are so firmly laid, and he has interested so many minds in the direction in which he labored that the work will go on, and the upbuilding of trade schools in this country will be distinctively a monument to this great-hearted projector. Colonel Auchmuty was an architect by profession and at the beginning of the war was a partner of James Renwick, of New York. Entering the service he was appointed assistant adjutant-general of volunteers in the Army of the Potomac, and afterward promoted to the rank of colonel, serving until the close of the war in the war department at Washington. He never resumed the practice of his profession, but has always been identified with charitable work. His great success in establishing the trade schools in New York, and his influence upon those established in Philadelphia and elsewhere and the remarkable results which have followed his system are known to everyone who has turned his attention in the direction of manual training.

Architects' Congress and Institute Convention.

The programme for the World's Congress of Architects, which convenes at Chicago during the week commencing July 31, will include the sessions of the twenty-seventh annual convention of the American Institute of Architects. There will be held at the same time the congresses of engineers and also artists, and the opening session will probably be a general one of the arts and sciences connected with building. While many distinguished architects from foreign countries will be present, the sessions will be largely representative of American architects and the larger focus of interest directed upon the architecture of the World's Columbian Exposition. In endeavoring to facilitate to the utmost the inspection of buildings the sessions will probably be short and but one each day. The members of the Illinois Chapter of the American Institute of Architects will constitute themselves hosts as far as possible and in every way contribute to the enjoyment of visitors. The Grand Pacific Hotel has been made official headquarters of the American Institute, while the rooms of the Institute of Building Arts, at 63 Washington street, will be a pleasant place for meeting and registry for architects, the display of building materials there being especially interesting to foreign architects. At the several sessions of the congress distinguished architects will be invited by the chairman, Mr. D. H. Burnham, to preside. In entertainment the committee in charge have not reported definitely, but promise agreeable diversion. The proceedings of the congress will be issued by the World's Congress Auxiliary in pamphlet form. The business meetings of the Institute will be held on Monday and Tuesday. The formal opening of the congress will occur at 2:00 P.M. on Monday. About thirty papers will be read during the sessions of the congress, of which there will be one each day during the week. The subjects will range from structural steel to polychromatic treat-

ment, and the readers from the United States to Japan. It is not expected that the attendance will be large, but the results of the record will be vital and lasting.

Two World's Fair Chiefs Resign.

Indicative of the final completion of the World's Columbian Exposition buildings and their decoration is the resignation upon July 1, of the chief of design, Mr. Charles B. Atwood, and Mr. F. D. Millet, chief of color. Mr. Atwood came into his connection with the Fair soon after the first general conception had been decided upon, and his work throughout his administration has been governed by a high intelligence and a perfect knowledge of the nature of design. While his office was to pass upon all designs offered for any erection within the Exposition grounds, his work did not rest here, for his abilities as a designer were too valued and the demand for their use too great to allow his work to remain with the inspection of the designs of others. The Art building having been left out of the list at first formulated and divided among the members of the architectural board this was placed in the hands of Mr. Atwood, and the architectural world knows how successfully he accomplished his task. Following this came a multitude of smaller but no less important designs. The Peristyle, with the Music hall and Casino at either end, is his, and in design is not less praiseworthy than the Art building, the balustrades, the pedestals for all statuary, the columns around the grand basin, all were designed by him and all bear the work of exceptional ability in the designer, not only as individual works but in their harmonious relation to their surroundings. Mr. Atwood will take a needed rest and then will appear in private practice. Mr. Millet, who succeeded Mr. Prettyman as chief of color at a time when the coloring of the buildings was in an experimental state, has filled that office with the best of judgment and with practical conception of every problem the work involved. Only one or two examples of Mr. Millet's talent as a painter are found in the frescoes of the building, but in these he has shown an ability equal to that with which he selected painters and designs. Mr. Millet's biography includes the life of a journalist, a soldier and a painter. In this last office, which he filled so satisfactorily, his ability as an organizer became most prominent, his workmen at the close presenting him with a handsome testimonial of their appreciation of the justice with which they were uniformly treated while under his direction.

Columbian Exposition Finances to date.

Descriptions and photographs have given to the world some conception of the vastness of the Columbian Exposition enterprise, those who have visited it have found that all previous estimates had to be enlarged, but the only "scale" by which accurate measurement can be obtained is the report of the treasurer, just issued. This report, which shows that the construction expenditures and obligations under contracts (the latter reaching about a million and a quarter dollars), are $17,516,581. The gate receipts July 1 aggregated over two million dollars, and the receipts for the first half of July aggregate more than one million dollars; thus the million and a quarter indebtedness is now removed and subsequent receipts will apply on stock and other obligations. $4,390,254.70 were expended in general operating and preliminary organization expenses, which makes the total cost of the construction $21,906,835.70. The operating expenses have been a little over $1,200,000 for the first two months of the Fair, and now that these have been largely reduced the average expense will, in the opinion of the Council of Administration, be about $15,000 per day. The board of architects who designed the buildings were paid $121,830, with incidental fees amounting to $37,728; the draftsmen's wages were $172,421, and their material, etc., $14,628, a total of $356,607 for architects' services. The landscape architects' services cost $22,720. The sculpture cost $350,250, which was divided between about ten sculptors and their assistants. This will, figured broadly, place the total cost of the designing of the buildings, which cost seventeen and one-half million dollars, at $729,577, or about four and two-tenths per cent upon the cost. It will be remembered that the board of architects when first organized, established the fee for designing to be paid to each individual member at $10,000, and the most significant deduction from this summing up of the total expenses is that even upon works reaching into the millions, five per cent upon the total cost is not exorbitant, and that in the case of the Exposition buildings about six-sevenths was expended for what would be termed office expenses.

Politics Ruins Public Architecture.

While the architects of all countries are viewing the unexcelled panorama exhibited by the "White City" of the Columbian Exposition, they will be astonished that in a country where so artistic a conception can be evolved by native artists—that is so rich in architectural talent—that they find a condition indicative of the direct opposite when they turn to the architecture that belongs to the public. They turn to the largest public building in the West and they find it crude in design, which they may forgive, but a veritable ruin in construction, and learn that this condition has existed since its walls were first completed. In looking for causes they find the entire public policy regarding things architectural based upon politics and the lobby. A policy that appoints a supervising architect from among those who will work for $4,500 a year and then through interest rather than merit, and led by a President who discharges the best servant the department ever had and one whose knowledge, extending over a quarter of a century, was vitally necessary, because some politician wanted his place for a favorite. This system not only obtains in the local office at Washington but reaches to the furthest boundaries of the country. The latest example of this worse than schoolboy management of public affairs is the recent removal of the superintending architect of the government building at St. Paul. A thorough architect of more than local reputation and a gentleman, Mr. Cass Gilbert, is removed because his opinions in politics were said to be different from that of the party in power. It matters little that his successor, Mr. Bassford, is an architect of ability, for the ridiculous position in which such acts as these and the results of the general policy which governs them places our government may well astonish visitors from foreign countries, where their public architecture is the most creditable. But there an architect is not chosen for his political opinions, and instead of improving, the disposition to pursue this policy has never been so great as it is with the present head of the government who in philistinism is only equaled by his imitator, the chief executive of New York state.

DIRECT METHODS IN ARCHITECTURAL PERSPECTIVE.

BY CHARLES E. ILLSLEY, A.M., C.E., ARCHITECT.

CHAPTER VI—*Continued.*

FROM these phenomena, which might almost be called optical illusions, but for the fact that no one is deceived by them, it follows that in a picture which shows things as they appear rather than as they are, every receding line must be drawn toward that vanishing point to which every line parallel with it converges. Indeed, linear perspective might be fairly well defined as the science and art of locating vanishing points.* These being obtained, we have only to ascertain a single point of any line whatever, and it can at once be drawn by joining this point with the proper vanishing point. Vanishing points in perspective diagrams are often designated by V, with a small letter attached, as Vr for vanishing point of lines running to the right, and Vl for those running in the opposite direction.

84. It has been remarked (Section 71) that a correct perspective would be obtained by joining with lines the points where visual rays pierce the plane of the picture. These rays are shown in Fig. 99 (reproduced from the June issue of THE INLAND ARCHITECT). The visual ray from the top of the nearest cross pierces the picture plane at *a;* the ray from its base pierces at *b*. Therefore the line *a b* in the picture plane is the perspective of the edge A B of the nearest cross. In like manner we find *c d* in the picture plane to be the perspective of the same edge of the farthest cross. Moreover, the line *a c* in the picture plane is the perspective of the horizontal line A C joining the tops of the crosses. Were the point C more distant, it is evident that its perspective *c* would be lower; were it infinitely distant, its perspective would fall to the horizontal line from the eye which represents the normal line of vision (Section 74). The point where the normal line of vision meets the plane of the picture is commonly called the *Point of Sight* of the perspective. The same term has another application (see Section 79), but its use in both senses is convenient and seldom confusing.†

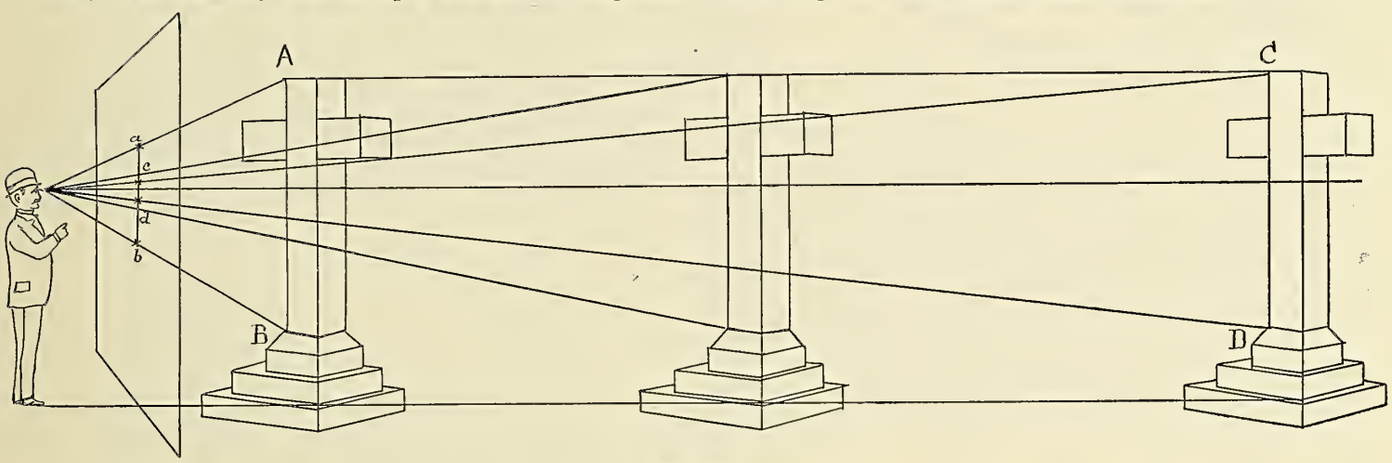


FIG. 99.

85. Fig. 104 is the plan (Section 19) of a railway (shown by double lines), seen by an observer at S, which may be called the point of station or standpoint. The plane of the picture is at A A′; the dotted line represents the normal line of vision, the single lines are plans of visual rays from the eye to points on the rails A, B, C, D, etc., taken for convenience so that the distance C D is twice the distance B C, and four times A B. The visual rays are conceived to be vertically above the lines S A, S B, S C, etc., which are their plans (Section 19), just as the eye of the observer is vertically over S; the rails themselves are conceived to be on a plane at the level of the foot of the observer. Hence the visual rays are considered in reality to slant from the eye down to the rails. This will not affect the plans of the rays, but it must be noted that the rays pierce the picture plane at varying heights exactly over the points *a*, *b*, *c*, which are, therefore, the *plans* of these points of piercing. The points themselves will be referred to by their plans, *a*, *b*, *c*, etc.

The point A, where the rail itself meets the picture plane, is its own perspective, *b* is the perspective of B, *c* of C, etc. In like manner A′ *b*′ *c*′, etc., are perspectives of points on the lower rail. Hence A *b* is the perspective of the length A B of the rail, A *c* is the perspective of A C, and A *d* of A D. We thus find that the perspectives of our rails on either side are directed toward the point of sight (Section 84) and approach it more and more closely as we take points more and more distant on the rails.

86. Fig. 105 is similar to Fig. 104 except that there is a double track and both are oblique to the plane of the picture. Our dotted line, parallel with the rails, now denotes an oblique line of vision (Section 74) and the point V where it pierces the picture plane is an oblique point of sight or vanishing point. It will be easy to see how of necessity the visual rays from distant points of the rails must pierce the picture plane nearer and nearer to V, while they can never pass it and will actually reach it only when the point of the rail from which the ray proceeds is infinitely distant.

It may also be noticed that while the perspectives of the rails approach the point of sight and draw nearer and nearer as the length of the rail increases, the rate of approach rapidly diminishes. In Fig. 104 the perspective of A B is A *b*, which is one-half of the distance from A to the point of sight. But *b c*, the perspective of B C, is about one-third of A *b*, although B C is twice A B. C D is four times A B, but its perspective, *c d*, is scarcely visible.

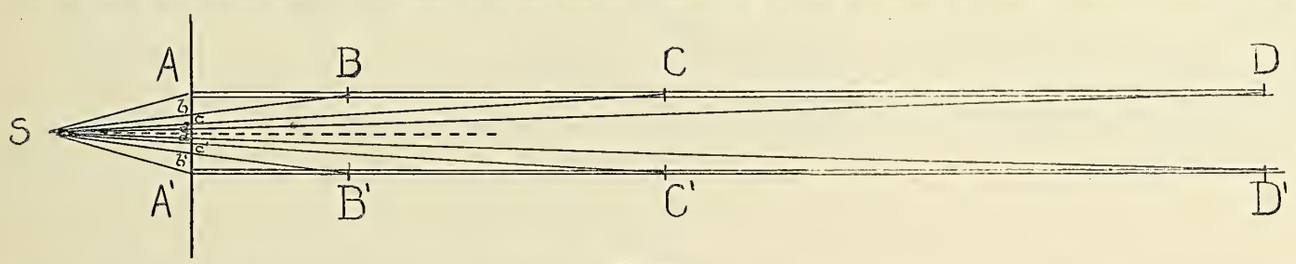


FIG. 104.

Now, since Figs. 99, 104 and 105 represent general principles applicable to any conceivable line of vision and every conceivable system of parallels, we find by the geometric process of tracing the paths of visual rays to the eye that the perspective of any receding line must be drawn toward that point where a line of vision parallel to it pierces the picture plane. If the receding line be normal to the picture plane (Section 74) this point is the point of sight; if oblique, the point is an oblique point of sight, or vanishing point (Section 79).

87. The term *receding lines* has been used hitherto somewhat

* This definition should be qualified by the remark that among the methods about to be described are numerous expedients for drawing receding lines directly without resorting to vanishing points.

† It has been proposed to call this point the Center of the Picture, meaning not so much its geometric center as its center of interest. This is apt to produce more confusion, however, than the retention of the old term, Point of Sight, usually denoted by the familiar initial P, and commonly defined as the point on the horizon of the picture directly opposite the eye of the observer. It is sometimes also called the Principal Vanishing Point, designated as before by P.

freely to designate such as are not parallel with the plane of the picture, and therefore, seem to "run into the picture," as is sometimes said. In perspective we consider but two classes of lines, those parallel with the picture plane and those not parallel, the perspectives of the former being parallel with the lines themselves and the perspectives of the latter converging toward vanishing points. Strictly speaking, of course, every line is a receding line, for there

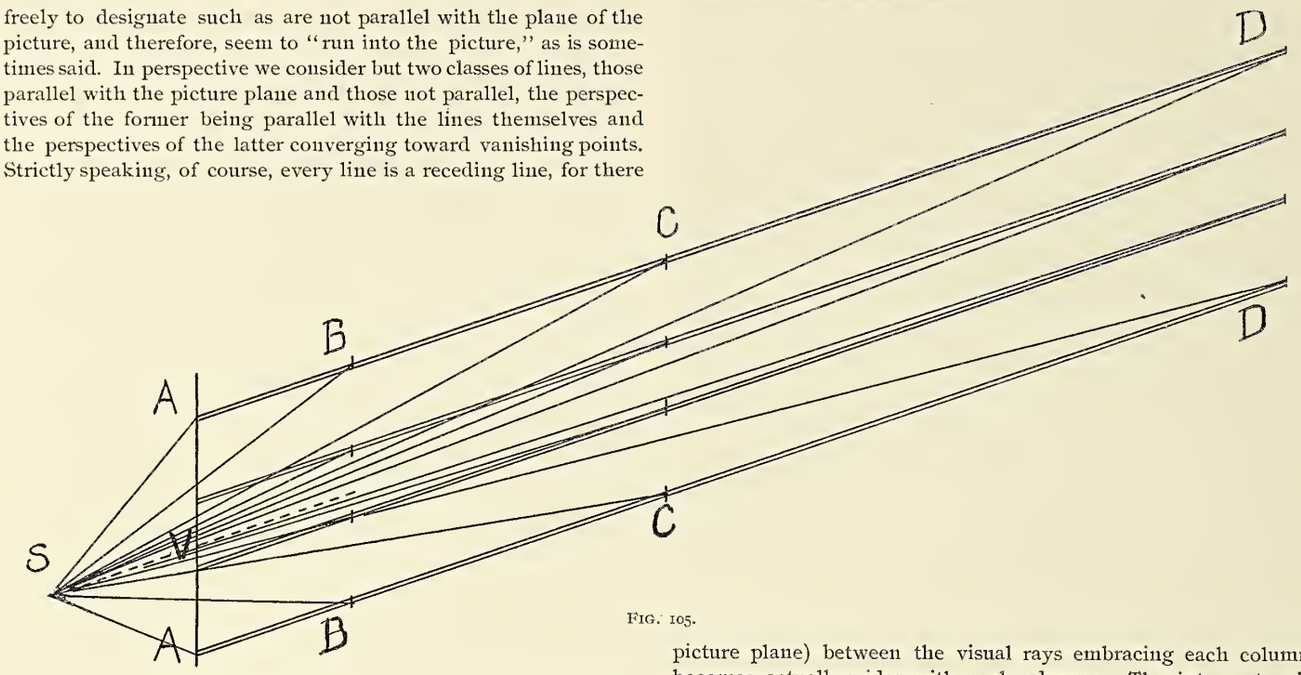


Fig. 105.

will be one point of it nearer the eye than any other, and beyond this point the line will recede as it extends in either direction.

88. There is likewise an error involved in the assumption that objects appear to the eye as if they were depicted on a transparent plane, called the plane of the picture (Section 24). In fact they must be considered as displayed on the inner surface of a concave sphere, of which the eye is the center, whose surface is equally distant in every direction, and on which all apparently straight lines are really circles or parts of circles. Where objects have considerable lateral extension the error of constructing their perspectives on a plane surface becomes noticeable, and has compelled a method of adjustment variously called cylindrical or

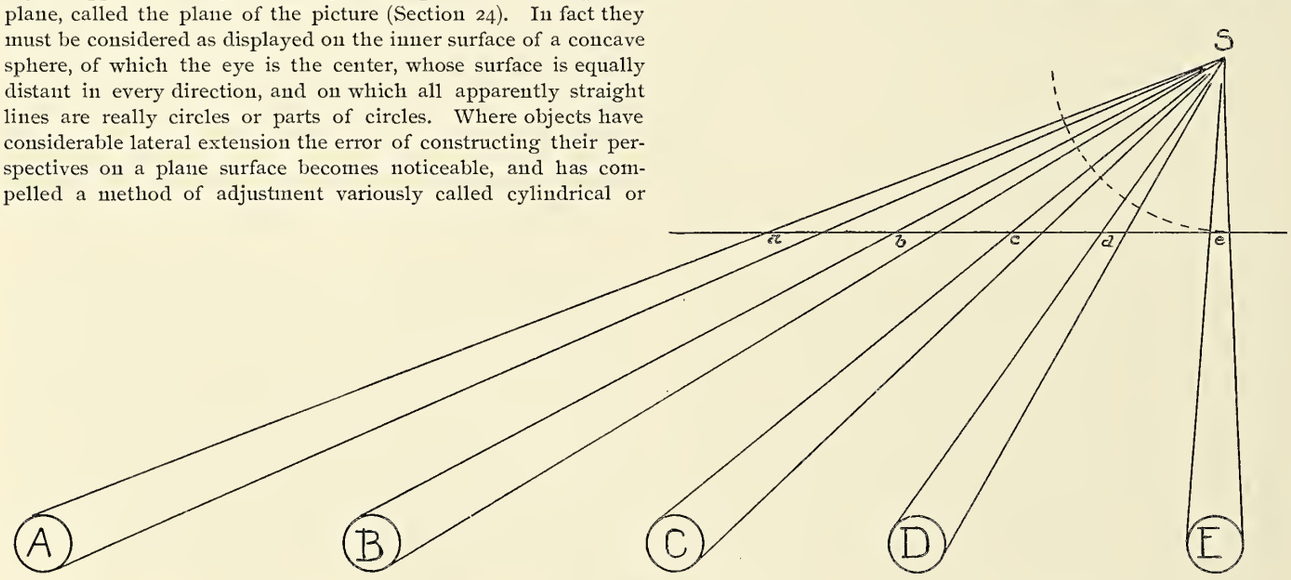


Fig. 106.

panoramic perspective. In illustration of the above, Fig. 106 represents in plan (Section 19) a row of columns, A, B, C, D, E, of uniform diameters, with their perspectives obtained upon a picture

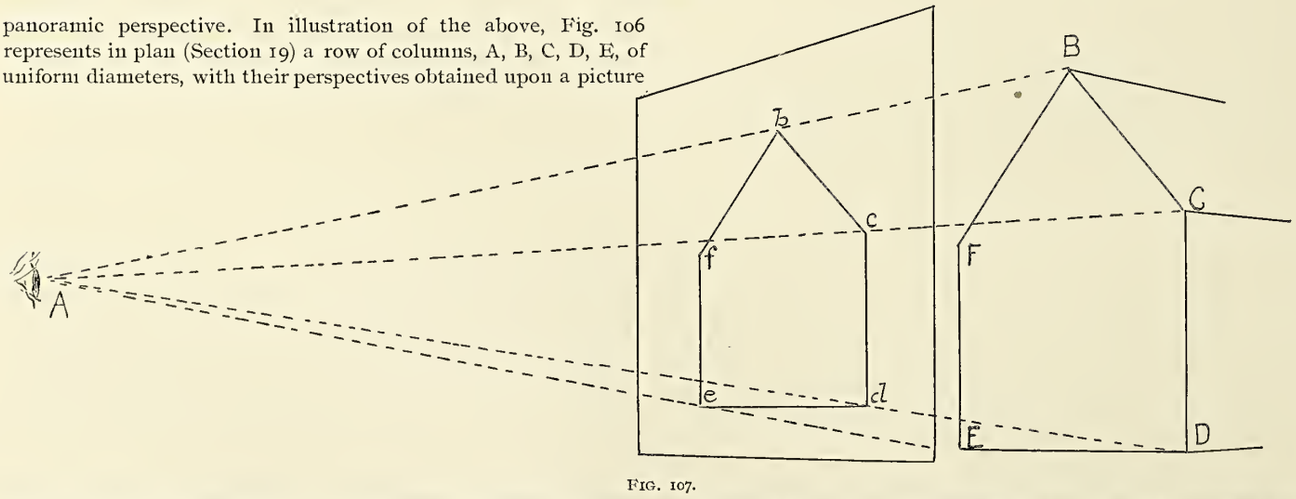


Fig. 107.

plane *a e*, from a standpoint S. While the more distant columns should be narrower in perspective than the others, it will be seen that they will actually appear wider in our picture. As we proceed from E toward A the intercept on our line *a e* (representing our picture plane) between the visual rays embracing each column becomes actually wider with each advance. The intercept *a* is nearly three times as wide as *e*; hence in our perspective the most distant column will be drawn nearly three times as thick as the nearest one. The correct relative widths of these columns would be obtained upon a circle, as shown by the dotted line, with S for its center and radius S *e*.

89. The same principles would apply to vertical lines, of course, all of which in nature must in fact seem to converge if actually

parallel. But the labor and difficulty of making perspective views would be greatly increased by any attempt to take into account the theoretical convergence of vertical lines; and in architectural work the horizontal and other lines parallel with the plane of the picture are usually so short that the error involved in making their perspectives parallel with the lines themselves rarely offends the eye. Still it is well to bear in mind the fact that for reasons of convenience our perspective practice is "conventional" and more or less inaccurate in the respects mentioned above.

90. Fig. 107 represents a picture plane parallel with the end of a house, all whose lines therefore are parallel with the picture plane. The small letters *b, c, d, e, f,* designate the perspectives of corresponding points in the house. A B C is a triangle in which the line *b c* represents the section of the triangle by a plane parallel with its base B C. The intersection of any triangle by a plane parallel with its base is parallel with the base. Hence *b c*, the perspective of B C, must be parallel with B C, and likewise with all the other perspectives *c d, d e, e f, f b.*

91. Upon these two principles, that if lines are parallel with the picture plane their perspectives are parallel with themselves, and that all other perspective lines, if prolonged far enough, will pass through and vanish in the point where a line of vision parallel with the real line (Sections 76 and 86) pierces the picture plane, the methods of architectural perspective mainly rest. In illustration of the best modern practice among architects, Fig. 108 is taken from Plate I of "Perspective for Beginners," by F. A. Wright, architect.*

The plan of the house is placed above the sheet on which the perspective is to be drawn, and so adjusted that a prominent corner shall just touch the line which represents the plane of the picture. The elevations to be used are drawn at either side. On the perspective sheet a standpoint, P^s, is selected, and lines drawn as shown radiating from P^s to the various points of the plan. These lines (dotted) are the plans of visual rays (Section 85). Through the points where they cross the "picture plane," vertical lines are drawn which form the perspectives of the corners, etc., of the house. The receding lines of this house are chiefly in two systems, each making an angle of forty-five degrees with the plane of the picture and running right and left. For each system a vanishing point is required. Each is found by drawing a line through P^s at forty-five degrees right and left with the picture

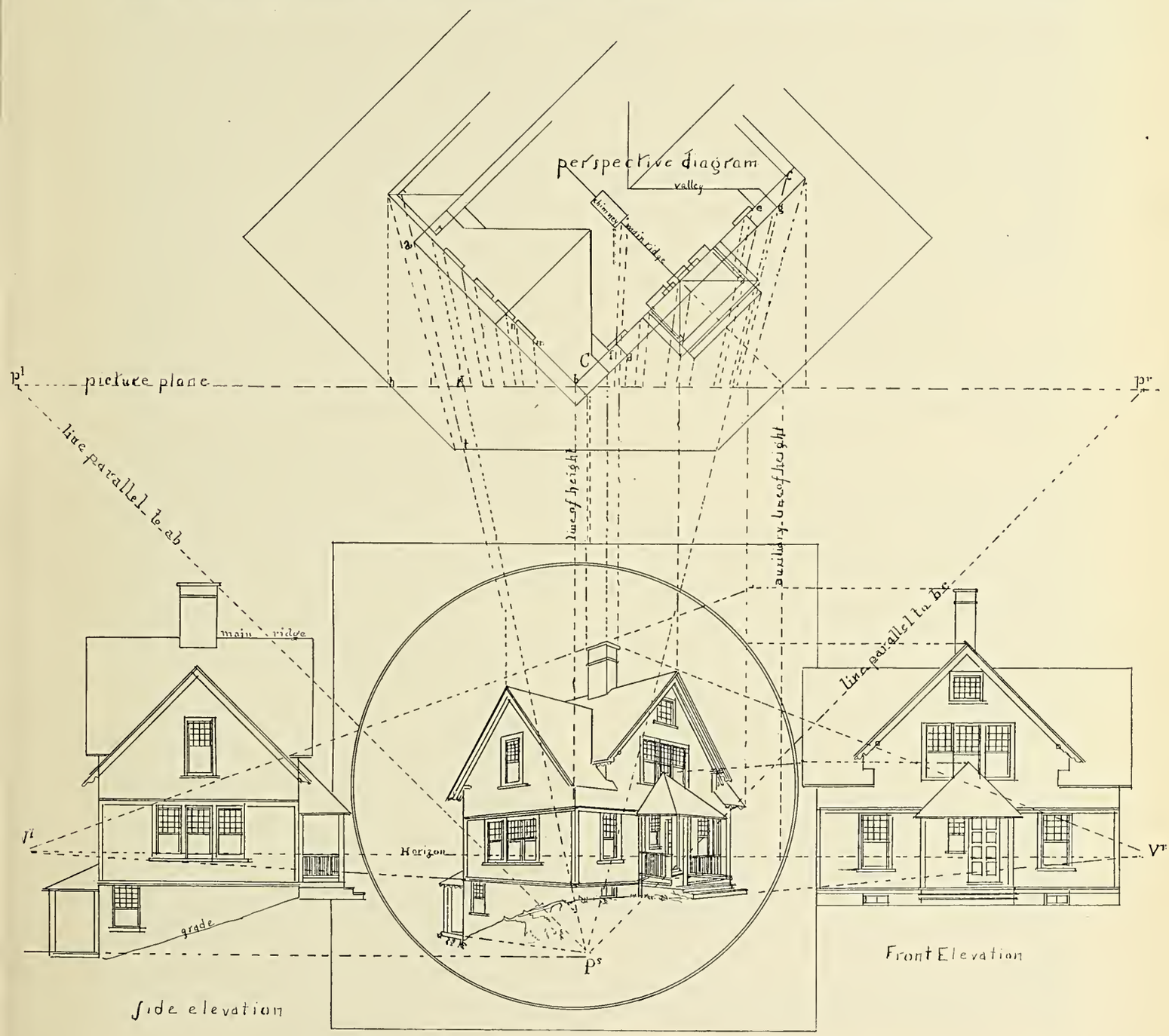


FIG. 108.

* William T. Comstock, New York, publisher.

plane. One line, Ps pl, is the plan of an oblique line of vision parallel with all horizontal lines in the left side of the building; the other, Ps pr, is a line of vision parallel with its right side. The horizon is denoted by Vl Vr, and the left vanishing point of horizontals, Vl, is on the horizon exactly under pl. Vr is correspondingly on the horizon under pr. All horizontal lines in the left face of the building converge in the perspective toward Vl; those in the right face converge toward Vr.

The heights from the elevations at either side are taken over to various "lines of heights" and transferred to the perspective of the respective lines by lines converging to Vl and Vr. These processes are shown in part by dotted lines — a greater number would confuse the plate.

92. This method has the advantage over all others of being universally applicable. It is believed to answer for the solution of every problem in linear perspective which can be solved at all. But for the general purposes of architectural design it is comparatively crude, indirect, cumbersome and liable to error. The selection of the point of station, Ps, the drawing of radial lines (plans of visual rays, Section 85) and the transfer to the perspective sheet of the points where these rays pierce in plan the plane of the picture, are generally unnecessary, and they are unscientific in the same sense in which it is unscientific to work out by counting on the fingers problems which with the multiplication table can be solved at once.

93. For the ordinary requirements of architectural practice the perspective sheet itself will yield all the data necessary without the use or mention of standpoint and picture plane, and without the drawing in advance of either elevations or plans. Since, however, the plans are arranged chiefly with regard to convenience and to constructive features, there is little occasion for studying them out in perspective, and, were this done, they would be unintelligible to clients until translated. Hence they are best elaborated in the usual way. But from this point the exteriors can be designed to best advantage primarily in perspective, and in most cases this can be done with entire ease by short, direct and precise methods and without recourse to any data which the perspective sheet itself does not furnish.

94. The same methods provide for the no less important problem of translating into orthographic plans and elevations the designs first elaborated in perspective. To draw elevations and then put them into perspective "to see how they will look," as is the traditional and time-honored custom, instead of first drawing the perspective till its looks are satisfactory and then translating it into plan and elevation, is sinister bungling in place of dexterous skill. If the elevations when thrown into perspective do not please, the process must be repeated again and again. With inexperienced draftsmen this is a laborious and often very unsatisfactory operation.

95. As a rule the elementary principles of perspective and their natural developments furnish to the architect ample data for working out on the perspective sheet itself without resort to any other, all his exterior or interior designs, and this can be done readily and accurately with any desired alteration and adjustment till the effect is satisfactory: then this can be translated directly into plan and elevation with equal certainty and ease. Moreover, in most cases this can be done without developing any new theorems, by merely applying in a new direction a few simple principles of descriptive geometry. Since the established method furnishes a certain, though laborious and unskillful solution of perspective problems, draftsmen everywhere seem to have been satisfied to use it, instead of developing the higher resources of perspective science.

It should be added that the direct methods are not only shorter in many cases and more convenient, but by reason of their directness they are less liable to error than the usual procedure.

(To be continued.)

The enlarged solar print of J. Carroll Beckwith's decoration for one of the domes of the Liberal Arts building at the World's Fair, published among the others in the July *Century*, was sent to Mr. Beckwith, in care of his banker, by the *Century* while he was traveling in Egypt. It followed him to the first cataract of the Nile, where it was retouched by him on board his dahabiyeh, remailed to the Century Company, and reached its destination in good condition in something over six weeks from the time it left New York.

ARCHITECTURE AT THE WORLD'S COLUMBIAN EXPOSITION.

PART I.

Architecture has been by common consent admitted to be the most prominent feature and crowning glory of the Exposition. This was assured long ago when the late John W. Root was appointed consulting architect to the Board of Directors. While none of the plans that he suggested, either for the lake front site or that which was subsequently accepted, were carried out, they were the groundwork of the discussions of the board of ten architects, chosen upon the nomination of himself and Mr. Burnham, who subsequently designed the main buildings. He was with them in their councils, and was ably seconded by the veteran landscapist, Frederick Law Olmstead. The main features of the whole scheme were decided upon before his sudden death, and have been adhered to throughout. There have been no changes, but many additions to it. Of the latter, the Peristyle flanked by the Music hall and Casino, the Fine Arts Palace and the Festival hall, are the principal features.

No part of the Exposition has been so much written about or illustrated as its architecture, and by that it will be best remembered. Heretofore, at all international fairs, the architectural treatment of the main buildings has been a secondary consideration in their construction. The best available artistic talent has not been sought or obtained. Such buildings have generally been the work of engineers, and architecture has only been invoked as a cloak to hide what was hideous and offensive. In some cases, as at Philadelphia, an architectural effect was sought for, but as competition was resorted to the natural result was failure. There was a reasonably good effect in the architecture of the main building at Philadelphia, but in all the others it was extremely bad. The beauty of the first exposition building at London, in 1851, the "Crystal Palace," as it was rightly called, was more a matter of accident than otherwise. It did not pretend to be other than a great conservatory, but it was designed by a man who was a great genius in his way, and not a professional architect. He has been immortalized by it. While it was not in any sense an architectural structure, it proved to be a great educator and called attention to the fact that there were great capacities for beautiful effects in other materials than brick and stone. Its influence has ever since been felt in architectural development. The first exposition in Paris, on the Champs-Elysées, gave us a façade in the best typical French style of the period, which has been preserved. The last Paris exposition was an attempt to do architecturally what has been a success at Chicago, but the best available talent was not employed. Engineering, as always before, was predominant, and but for the fact that the group was helped greatly by the Trocadero having been incorporated with it, there would have been little to exert an influence or perpetuate a memory. It is natural that France should be content with the glories of her architecture, ancient and modern, and rest on her laurels. Hence the projectors of her last great effort did not feel that incentive which actuates us today to use the art of architecture as a great educator. They could point to their monuments dating from the Roman period to the present day as exemplars of all that was great, good and beautiful.

But the directors of the World's Columbian Exposition did not err in selecting their earliest advisers—nor did they fail to carry out to the utmost extent every suggestion offered to them. There has been no bickering or halting. The architects selected for their work have all done their best. The engineering work, magnificent in itself, is all subordinated to the architectural work. There have been no blunders, no scandals. The work is complete and finished. The sculpture is in place on the buildings and the decorative paintings are now revealed. Only recently the scaffoldings in the dome of the Art Palace have been removed, and the competition between the designers of the interior of the domes of the Administration and Art buildings, before the jury of the world, is the greatest the world has ever seen. Thus far but little has been said or printed about the interiors of these structures. The exteriors have caught the eye first, but these interiors have entailed the greater study. They are now ready for all students of art to enter. They will be treated of in these pages hereafter more in detail.

As has been said already, it was the settled purpose from the day that John W. Root was appointed as consulting architect, to make everything at the Exposition an exhibit. This has been

accomplished. The architecture of the buildings is the leading and most prominent exhibit. In order to make this general, a censorship was set up in the construction department over all state, foreign and concessionary buildings, over all effects of color and treatment of grounds, and this has been carried out in almost every case. Of course there are a few exceptions, and it has been impossible to prevent a limited number of architectural moustrosities from appearing in the park ; and these we can afford to pass in silence. But the main idea was readily taken up by most of the states and foreign countries.

Among the states those that have done greatest honor to themselves and the Exposition are New York, California, Ohio, Massachusetts, New Hampshire, Iowa, Virginia, Idaho, Colorado, Texas and Louisiana.

Many of the foreign governments were not slow to appreciate the importance of the Exposition as a contest in architectural design. In this Germany has taken the lead, with a building which in its main features is a typical German Stadthaus of the fifteenth century ; but in its construction, nearly all of the materials were wrought in and brought from Germany — nearly every method of building now in use in that country is exemplified.

England sent the designs of an Elizabethan manor house, by one of her ablest architects, which were faithfully executed by Chicago mechanics.

The Swedish building is a typical one, grandly picturesque in design, built entirely of Swedish materials, among which are incorporated as exhibits some examples of the modern manufactures of that country, which will be of interest to all architects.

Japan has constructed a typical building to illustrate three periods of ancient Japanese architecture entirely as an exhibit and a present to the city of Chicago, all of which has been described in these papers.

Even Ceylon, an English dependency, has erected a building which is of great interest on account of the native carvings that it contains.

It is our intention to illustrate the Exposition by a select collection of photogravures of completed buildings and parts of buildings, which have been specially photographed for the purpose. A few of these appear in the present number, and they will be continued as our space admits.

The architectural setting of the exhibits, both American and foreign, will be another feature of our illustrations. A vast amount of study has been given to many of these, and the memory of them ought to be perpetuated.

If it is possible to do so, we will illustrate also a number of architectural night effects, which the arrangements of the Exposition for lighting make practicable.

(To be continued.)

FIFTH ANNUAL COMPETITION FOR THE ROBERT CLARKE TESTIMONIAL.

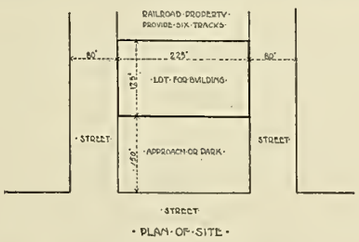
THE conditions for the fifth annual competition for the Robert Clarke testimonial, under the auspices of the Chicago Architectural Sketch Club, of Chicago, which have just been issued, are as follows :

CONDITIONS :

The author of each design must execute all drawings without assistance, and non-adherence to these conditions will cause the rejection of the design or designs in question.

The competition is open to architectural draftsmen under thirty years of age, residents of the United States, and not practicing architects.

The awards will be made by the Adjudicating Committee on the "Robert Clarke Testimonial" competition, and are : First prize, gold medal ; second prize, silver medal ; third prize, bronze medal.



PLAN OF SITE

The prize drawings are to become the property of the Chicago Architectural Sketch Club.

PROGRAMME :

A design for an elevated railroad terminal station for suburban traffic, in the business center of a large city.

The building is to have three general stories, the first or ground floor to contain a lobby, stairways, offices and all necessary conveniences.

The second floor is to be on a level with the platform, and to contain one general waiting room, one waiting room for women and one for men, toilet rooms, ticket office, depot master's office and necessary stairway to reach the railroad company's offices on the third floor.

The building can be smaller than the lot outlined on the accompanying diagram, and the space in front is to be used as an approach or park.

The drawings are to consist of the following, their arrangement and the number of sheets being left to the discretion of the competitor :

First or ground floor plan, second floor plan, front and side elevations, transverse or longitudinal section, perspective and block plan.

Size of sheets to be 22 by 28 inches.

Plans, elevations and section to be drawn to a scale of $\frac{1}{16}$ of an inch to a foot, pen and india ink rendering. The perspective to be drawn from an $\frac{1}{8}$ scale plan, rendering optional.

The drawings are to be marked with a motto or *nom de plume*, and accompanied by a sealed envelope marked in the same manner, containing the name and full address of the author, with the place and date of birth, and must be delivered flat to Hugh M. G. Garden, secretary, Chicago Architectural Sketch Club, at the club rooms, 913 Masonic Temple building, Chicago, on or before Monday, October 2, 1893. Charges to be prepaid. All drawings other than those receiving prizes will be returned at the expense of the contributor.

W. L. B. JENNEY, Chairman ;
SAMUEL A. TREAT,
CHARLES A. COOLIDGE,
D. H. BURNHAM,
LORADO TAFT,
Adjudicating Committee on the Robert Clarke Testimonial.

HEATING AND VENTILATION OF RESIDENCES.

BY JAMES R. WILLETT.

Copyrighted by the author, 1893.

TO FIND THE GRATE AREA.

FIND the value of "Q" for each room and then their sum will give the value of "Q" for the whole house. Consider this "Q" as radiator surface and take out the corresponding grate area from Table II, hereinafter given.

It is important to keep a low fire in a hot-air furnace since the heated metal comes in direct contact with the fresh air and may, as it is called, "burn" it. Therefore it is better to take as large a grate area as is called for by table. A powerful furnace does not need to be run up to a high temperature and will not burn any more coal than a small furnace will that is run at a high temperature.

The most desirable pattern of furnace to use can only be ascertained by examining them.

In order that the heat generated by the fire may be communicated to the air in the hot or fresh-air passages of the furnace, it is necessary that the surface between the fire or smoke passages of the furnace and the hot, or fresh-air, passages of the furnace shall be large in quantity. The more the better. It can scarcely be too much.

This leads to more or less winding around of these passages, with usually also a direct and short passage intended for use when a fire is first started, but which should be closed by means of a damper as soon as the fire is fairly under way, and the draft forced to take a circuitous route.

If the furnace has not circuitous passages, but only direct communication with the chimney, then there will be less opportunity for the heat to communicate itself to the fresh-air passages, and more of the heat will go up the chimney, in which case the grate would need to be larger.

The desire is to wind the smoke-passages about through the fresh-air passages so there will be an opportunity for a large portion of the heat which is in the smoke flues to be communicated to the air in the fresh-air passages before the smoke passes up the chimney. But the passages must be arranged so as not to readily choke up by soot, and so that they can be cleaned out.

The firepot of the furnace is usually of cast iron, but it would undoubtedly be better if the firepot was surrounded by fire tile or brick so that the air in fresh-air passage may not be exposed to the iron surface at a red heat, as is often the case in cold weather.

The furnace should be placed on the side of the house against which the prevailing winds strike (north and west) and in other respects as near central as practicable.

If the supply of fresh air to furnace is to come wholly from the fresh-air inlet, then it will be found at times that it is difficult to heat the house.

Some other means, therefore, must be taken to supply additional air to the furnace. The best way, perhaps, is to have a duct running from a register opening in the floor of the hall, near entrance door, down to the bottom of the furnace. This duct should not enter the furnace opposite to the fresh-air inlet opening, but should enter parallel to the fresh-air inlet. Otherwise,

the air from one inlet might pass out of the other. The partition between the two inlets should extend some distance into the furnace, so as to prevent this from occurring. The register in the first floor communicating with this—what we shall call "circulating pipe"—should not have valves upon it. And the hot-air pipe from the furnace to the hall should also have a register face without valves. This will allow of a constant circulation of air and prevent the house from getting cold.

There is another advantage: when the weather is but slightly cold, the house is apt to become too warm, and the registers would probably be closed. There being no egress from the air heated in the furnace, it is apt to become dangerously hot, and thereby cause the house to take fire. By means of a circulating pipe and a hot-air pipe to the hall, neither register having valves to it, the circulation cannot be wholly stopped, and the hot air is thereby prevented from attaining a dangerous temperature.

The area of this circulating pipe should be one-half of the cross sectional area of fresh-air duct.

Rooms that are distant, horizontally, from the furnace are very difficult to heat. This difficulty has given rise to what is called a "combination method" of hot water and hot air; the hot-water apparatus being used to heat the rooms which are distant, horizontally, from furnace. The boiler is placed inside of the furnace just above the fire, and from it hot-water pipes lead to radiators which are located in the distant rooms.

The Perfection Furnace Pipe Company, of Toledo, Ohio, have also published a sheet of cuts of their pipe. The Ruttan Manufacturing Company, of Chicago and Cleveland, have also published some pamphlets exhibiting their work.

A great deal of information can be had from some of the trade catalogues, but many of them need much discrimination in their use, as they are to a degree filled with laudations of the particular ware that is for sale, rather than with correct information on the subject of furnace heating.

CONCLUSION.

In order to bring this address within a reasonable compass, it has been necessary to omit many things that you should know. Copies of specifications and drawings of some work actually executed, will remain with your worthy professor of architecture who will, doubtless, give instruction to anyone of you who desires further information.

The recent introduction of the incandescent electric light bids fair to do away with the use of illuminating gas and with the corresponding vitiation of air. It is to be hoped that the use of that electric light will spread rapidly.

It is not necessary to carry the calculations into long decimals. A logarithmic table of four places from Nos. 10 to 99 is sufficient; such a table is given in Carnegie's pocket-book for I beams, etc.

HEATING QUANTITIES—HOT-AIR FURNACE.

BUILDING: Frank Hamilton. LOCATION: DATE:

FIRST STORY.	Room No. 22, Stair Hall.	Room No. 23, Toilet.	Room No. 24, Parlor.	Room No. 25, Sitting.	Room No. 26, Dining.	Room No. 28, Butler's Pantry.	Room No. 32, Kitchen.	
								Q's
R =	83	6	54	60	49	10	82	116
F =	1.4	1.4	1.4	1.4	1.4	1.4	1.4	12
							.....	75
	33.2	2.4	21.6	24.0	19.6	4.0	.....	84
	83	6	54	60	49	10	Too distant from	96
								20
RF =	116.2	8.4	75.6	84.0	68.6	14.0	furnace.	
J =	1.0	1.4	1.0	1.0	1.4	1.0		1st story .403
								2d " .250
	.....	33.6	.....	.....	274.4	.....	.....	
	.....	84	.....	.....	686	.....	.....	Total Q..653
Q = RFJ =	116.2	11.76	75.6	84	96.04	14.0	.....	or Grate area
= sq. in. cross-sectional area of leader.	12-inch pipe	7-inch pipe	10-inch pipe	12-inch pipe	12-inch pipe	7-inch pipe	.....	= 653 sq. in.
Diameter of leader adopted.....	12-inch	7-inch	10-inch	12-inch	12-inch	7-inch	.....	.....

SECOND STORY.	Room No. 40, Chamber.	Room No. 41, Stair Hall.	Room No. 42, Chamber.	Room No. 45, Chamber.	Room No. 47, Chamber.	Room No. 50, Bath.	Room No. 54, Servant's Chamber.	
								Q
R =	20	49	46	43	38	19	45	33
F =	1.2	Transferred	1.2	1.2	1.2	1.2	Too distant	55
		to 1st					from	52
RF=	24.0	story.	55.2	51.6	45.6	22.8	furnace.	64
J =	1.4	.....	1.0	1.0	1.4	2.	.....	46
	9.60	.....	.....	.....	18.24	45.6	.....	2d story .250 Q
	24	.....	.....	.....	45.6	.....	.....	Transferred
								to 1st story.
Q = RFJ =	33.60	.....	55.2	51.6	63.84	.....	.. ..	
= sq. inches cross-sectional area of leader and stack.	7-inch pipe	.....	9-inch pipe	8-inch pipe	9-inch pipe	8-inch	.....	
Diameter of leader adopted	7-inch	.....	9-inch	8-inch	9-inch	7-inch	.....	

The greater portion of the residence is heated by hot-air furnace and the hot-water apparatus is subsidiary thereto; consequently, the grate is far larger than would be required for the hot-water boiler alone, and the hot-water boiler being inside the furnace is necessarily small. In cold weather if the fire be pushed, the water apparatus being small, steam is likely to be generated and the water driven out of the apparatus. To remedy this, it is necessary that the radiator surface should be large compared with the boiler surface, and the pipes full size, so that the water may be readily cooled off and the formation of steam prevented. Valves should not be used, as the circulation should not be stopped.

Some boilers are constructed so that they can readily be made smaller, and thus the heating surface in the boiler reduced. This is effected by removing certain parts of them which are made so that they can be detached.

Plate XVI shows a house heated by a hot-air furnace. It is the same house that is given in Plates IV, V, VI, VII, VIII, XIII.

Mr. John Millar and also Mr. Harcourt Mott, each of them separately, were good enough to make designs for heating this building by furnace. The difference between the designs was slight, and did not vary materially from the results of the rules given.

The above table is the calculation for the furnace for this house. The values of "R" being taken from example already given under hot-water heating, as it is the same house.

There have been but few writings on the subject of furnaces by disinterested parties. In Putnam's "Open Fireplace," page 108, there is an interesting and instructive article on hot-air furnaces, which you should read.

The Excelsior Steel Furnace Company, of Chicago, have published a catalogue containing much correct detailed and practical information, together with cuts of furnaces and their fittings.

The student who desires to learn how he should design a heating apparatus, should read some of the books on the subject, especially those which have been written by men engaged in the actual execution of work.

The books by Mills, Baldwin, Hogan, Schumann, Hood, Briggs, Box and Woolf are of special value.

For general knowledge the young architect should read portions of Parke's "Practical Hygiene," Buck's "Public Health," Billings' "Ventilation and Heating," and Fothergill's "Town Dweller."

Besides reading these books, it is necessary that he should acquire a knowledge of how the trade carry out such works; the trade sizes of the various materials used, etc. He can best acquire this by conversing with practical men like steamfitters, etc., by observing their work and familiarizing himself with their methods. Such men can give a young architect information of value, and prevent him from making designs calling for sizes, shapes, etc., which will be unnecessarily costly, and which will also betray his ignorance of the actual methods of doing such work.

There are some trade catalogues, etc., that are valuable for the amount of information they contain. The "Abram Cox Stove Company," of Philadelphia, has issued a very large and valuable one on hot-water heating. The "Richardson & Boynton Company," of New York, has issued a pamphlet of "Instructions" on the same subject, and some furnace catalogues are valuable as mentioned under the heading of "Hot-Air Furnace Heating."

I am under many obligations for much valuable information to practical men. Thanks are especially due to A. L. Hay, Carlile Mason, John Woodman, James H. Davis, P. S. Hudson, Charles H. Patten, John Millar, George Phillips, Harcourt Mott, John J. Spear, F. W. Lamb, and to others of Chicago; also to Messrs. Kruse & Barker, of Milwaukee.

TABLE I.

Table of minimum temperatures, and of values of $\frac{I-E}{E} = \frac{70-E}{70}$

"E" being taken as 10 degrees higher than miuimum temperature.

PLACE.	Minimum Temperature. Degrees.	Value of $\left(\frac{70-E}{70}\right)$ 0.9
Dulnth, Minn	—38	1.25
St. Paul, "	—32	1.18
Milwaukee, Wis	—25	1.09
Burlington, Vt	—20	1.03
Chicago, Ill	—20	1.03
Detroit, Mich	—20	1.03
Indianapolis, Ind	—18	1.00
Albany, N. Y	—17	0.99
St. Louis, Mo	—16	0.98
Buffalo, N. Y	—13	0.94
Cleveland, Ohio	—13	0.94
Pittsburgh, Pa	—12	0.92
Portland, Me	—12	0.92
Boston, Mass	—11	0.91
Lonisville, Ky	—10	0.90
Cincinnati, Ohio	— 7	0.86
New York, N. Y	— 6	0.85
Philadelphia, Pa	— 5	0.83
Washington, D. C	— 5	0.83
Baltimore, Md	— 2	0.80

TABLE II.

The required grate area can be taken from the following table, which gives the requisite square inches of grate area for each 100 square feet of radiator surface.

Total sq. ft. of Radiator Surface in building	Sq. inches Grate Surface.	Total sq. ft. of Radiator Surface in building.	Sq. inches Grate Surface.	Total sq. ft. of Radiator Surface in building.	Sq. inches Grate Surface.
100	120	800	630	1,500	1,040
200	208	900	693	1,600	1,100
300	288	1,000	754	1,700	1,150
400	362	1,100	813	1,800	1,210
500	433	1,200	872	1,900	1,260
600	501	1,300	930	2,000	1,310
700	567	1,400	986		

TABLE III.

OVERHEAD HOT-WATER METHOD.

Values of "F" for direct radiation in different stories.

STORY.	Two-Story House.	Three-Story House.	Four-Story House.
First	1.2	1.25	1.30
Second	0.8	1.00	1.20
Third		0.75	0.90
Fonrth			0.60

TABLE IV.

HOT-WATER HEATING.

Sizes of pipes corresponding to radiator surface supplied by them.

Diam. of Pipe. Inches.	Maximum sq. ft. of Radiator Surface that it will supply.	Diam. of Pipe. Inches.	Maximum sq. ft. of Radiator Surface that it will supply.
1	40	3	560
1¼	70	3½	810
1½	110	4	1,110
2	220	5	1,900
2½	360	6	3,000

It is best not to use anything less than 1¼-inch pipe for radiator service.

TABLE V.

STEAM HEATING—LOW PRESSURE—ONE-PIPE METHOD.

The diameters of pipes necessary to supply radiators can be taken from the following table, which is meant for vertical portion of branches. The horizontal portion of branches should be made one size larger. Do not use any pipe less than one inch diameter. The sizes of mains can also be taken direct from this table.

Diameter of Pipe. Inches.	Maximum square feet of Radiator Surface that pipe can supply.	Diameter of Pipe. Inches.	Maximum square feet of Radiator Surface that pipe can supply.
1	30	3	615
1¼	55	3½	915
1½	90	4	1,280
2	200	5	2,230
2½	370	6	3,520

TABLE VI.

TRADE SIZES OF "LEADERS" (ROUND PIPES) AND THEIR CROSS-SECTIONAL AREAS.

Diameter. Inches.	Area of Cross Section. Square Inches.	Diameter. Inches.	Area of Cross Section. Sqnare Inches.
7	38	16	201
8	50	18	254
9	63	20	314
10	78	24	452
12	113	30	707
14	154		

No leader is used less than 7 inches.

TABLE VII.

HOT-AIR FURNACE HEATING.

TABLE OF SIZES AND DIMENSIONS OF SAFETY DOUBLE HOT-AIR STACKS.*

Size of stack, as listed, in inches.	Actual size of outside stack.	Actual size of inside stack.	Area of inside stack in inches.	Capacity as compared with that of leader with pitch of 1 inch to 1 foot.	Equivalent in leader with pitch of 1 inch to 1 foot.	Sizes of leader which should be used with each stack.	Area of said leader in square inches.	Size of registers and register boxes which should be used with each stack.	Cubic feet of space (approximate) that can be heated with each stack with leader and registers of size given.	Equivalent of said space on floor of rooms 10 feet high.	Area in inches of registers with space occupied by bars deducted.
4 by 8	3⅝ by 7⅝	3¼ by 7	23	35	6¼	7	38	6 by 8	500	6 by 8	35
4 " 10	3⅝ " 9⅝	3¼ " 9	29	43	7½	8	50	8 " 10	850	8 " 10	45
4 " 11	3⅝ " 10⅝	3¼ " 10	32½	48	8	8	50	8 " 12	1000	8 " 11	55
4 " 12	3⅝ " 11⅝	3¼ " 11	35	53	8¼	9	63	9 " 12	1250	10 " 12½	60
4 " 14	3⅝ " 13⅝	3¼ " 13	41	63	9	9	63	10 " 12	1650	12 " 14	70
6 " 10	5⅜ " 9⅝	5¼ " 9	47	71	10	10	78	10 " 14	2000	12 " 17	80
6 " 12	5⅜ " 11⅝	5¼ " 11	58	87	11	12	113	12 " 15	2300	14 " 17	115
6 " 14	5⅜ " 13⅝	5¼ " 13	68	102	12	12	113	12 " 17	2600	15 " 18	120
8 " 16	7⅜ " 15⅝	7¼ " 15	79	119	12½	14	154	14 " 20	3000	15 " 20	156
8 " 18	7⅜ " 17⅝	7¼ " 17	124	186	15	16	201	16 " 24	4000	20 " 20	210
10 " 20	9⅝ " 19⅝	9¼ " 19	176	264	18	18	254	20 " 24	5400	20 " 27	270
10 " 24	9¾ " 23⅞	9¼ " 23	213	330	20½	20	314	21 " 29	7000	20 " 35	340

Stacks for 4-inch studs carried in stock.

*This table is copyrighted by the Excelsior Steel Furnace Company, of Chicago, and is here copied by the kind permission of A. W. Glessner, the president of said company

TABLE VIII.

LIST OF SIZES OF REGISTERS GENERALLY USED.

Size of Register. Inches.	Gross Area. Square Inches.	Size of Register. Inches.	Gross Area. Square Inches.
6 by 8	48	12 by 15	180
8 " 10	80	12 " 17	204
8 " 12	96	14 " 20	280
9 " 12	108	16 " 24	384
10 " 12	120	20 " 24	480
10 " 14	140	21 " 29	609

OUR ILLUSTRATIONS.

A Denver Residence. McCurdy & Pulis, architects.

The Ursuline Convent, Cleveland, Ohio, C. F. Schweinfurth, architect.

House for Henry D. Barber, Polo, Illinois. J. L. Silsbee, architect, Chicago.

Residence of H. K. Hatch, Cleveland, Ohio. C. F. Schweinfurth, architect.

Terrace for John H. Brown, Detroit, Michigan. Edward C. Van Leyen, architect.

House for J. L. Cochran, Edgewater, Illinois. George W. Maher, architect, Chicago.

Academy for the Sisters of St. Benedict, Duluth, Minnesota. G. A. Tenbusch, architect.

Residence for C. T. Purdy, Oak Park, Illinois. Patton & Fisher, architects, Chicago.

View in Hall, residence of R. H. Shoemaker, Cincinnati, Ohio. James W. McLaughlin, architect.

St. Stephen's Roman Catholic Church, Philadelphia, Pennsylvania. Frank R. Watson, architect.

Sketches of the exterior and interior of the "Coffee House," Hull House, Chicago. Pond & Pond, architects.

Chicago College of Dental Surgery, Dental Department of Lake Forest University. Willett & Pashley, architects, Chicago.

Agricultural Hall, State Agricultural College, Ames, Iowa, Josselyn & Taylor Company, architects, Cedar Rapids, Iowa.

Premiated Competitive Design for the Iowa State Building (as first located), World's Columbian Exposition, Chicago. Josselyn & Taylor Company, architects, Cedar Rapids, Iowa.

The New Rawson building, Cincinnati, Ohio. James W. McLaughlin, architect. It will be thoroughly fireproof throughout, steel skeleton construction and brick and terra cotta on exterior. Estimated cost about $60,000.

Photogravure Plate: Norwegian building, World's Columbian Exposition. W. Hausteen, of Norway, architect. The building is constructed entirely of wood, and is an exhibit of the Norwegian system of construction. Idaho state building. Cutter & Poetz, architects, Spokane. Constructed of stone and mammoth logs.

PHOTOGRAVURE PLATES.

(*Issued only to subscribers to the Photogravure edition.*)

The clock in the Building of Manufactures and Liberal Arts, World's Columbian Exposition. Mr. A. Sandier, of the construction department, architect. Designed under the direction of Mr. Atwood, designer in chief. The clock is finished in staff throughout and treated in white and gold. The clock is an exhibit and is supplemented by a chime of bells. This is the principal work of Mr. Sandier, whose other designs are the Clambake Building and the Children's Building.

Fine Arts Palace, center of south front, World's Columbian Exposition, Jackson Park, Chicago. C. B. Atwood, architect. This view is taken across North Pond, from the boat landing at the northeast corner of the Illinois Building. It will be seen that the statue of Fame has been removed from the top of the dome and the statue of Minerva in front of the Peristyle has been completed. Mr. Atwood's design is seen at its best from this point. The walls of the Art Palace are built of brick on a concrete foundation. They are furred off on the outside and plastered. The columns and entablatures are of wooden framework covered with staff. The dome was first covered with canvas and well painted. It was then covered with scales made of staff. The steps leading to the building are all made of concrete resting on a foundation of steel beams and brick arches.

New York State Building, World's Columbian Exposition, Interior of Portico Looking East. McKim, Mead & White, of New York, architects. The state of New York selected as its architects the firm that had already been appointed to design the Agricultural building. Besides these they are represented on the grounds by the Puck building and the exhibit of the White Star Steamship Company, both located north of the Horticultural building. New York and Pennsylvania were given the best sites on the north side of the Art Palace, while Illinois and California were given the best sites to the south. The New York building is not a typical New York or American building. It is rather an adaptation of a famous Italian palace, and as such is quite as interesting as a study as any other type would have been. It is a complete club house, and contains all the features of such institutions, the state of New York having made its exhibition only in the main building.

California State Building, World's Columbian Exposition center of east front. A. Page Brown, of San Francisco, architect; P. B. Wight, of Chicago, consulting architect. This is a type of the old Mission Buildings erected by the Padres in Old California between the year 1750 and the beginning of the present century. The features of several of these interesting structures, which are still in a good state of preservation, have been introduced. The center of the east front most resembles San Antonio of Padua, about 1771, and San Louis Rey, about 1798, while the towers shown in the photogravure resemble Carmel about 1771. The building is used mostly for exhibits of the products of the soil and mines of California, but also contains a gallery of paintings by California artists that is fully up to the average of the American paintings in the Art Palace. Under the dome is a palm tree sixty feet high and said to be 120 years old, surrounded by a terra cotta fountain made in California, and designed by Mr. Brown.

Victoria House, British headquarters, World's Columbian Exposition, Jackson Park, Chicago. Colonel Edis, architect. This building, like the German headquarters, is placed near the beach on a slight elevation. The view is taken from the bridge over the lagoon, which passes it on the south. It is built of permanent materials on a foundation of piles, and is in no respect a temporary building. The exterior was built after the English designs by a Chicago contractor with Chicago materials. The first story is of terra cotta and red pressed brick. The second story is timber construction filled in with brick and plastered. Much of the plaster is in stamped patterns too delicate to be shown on the picture. The roof is covered with slate. The interior woodwork, of exquisite design and execution, was mostly worked in England. As this building occupies the site of the old refreshment pavilion, it would seem proper that it should come into possession of the park commissioners for the same purpose.

Headquarters of Exhibition Building, Germany—Views from the northeast and southeast—World's Columbian Exposition, Jackson Park, Chicago. Karl Hoffaker, architect. This building fronts on the old park road that skirts the lake. It is a permanent structure built on a foundation of concrete and stone, and it is to be hoped that it will remain as one of the memorials of the great exhibition and a permanent adornment of Jackson Park. It could be used as a museum of art without alteration, or might with slight changes be turned into a restaurant, which is much needed in the park. With the exception of the foundations the brick and some of the floor joists, all the materials were brought from Germany wrought and ready to put up. Everything in the building is of a permanent and substantial character. No meretricious or imitative materials have been used. It illustrates not only the styles that prevailed in the fourteenth and fifteenth centuries, but in its construction all the methods of building employed in Germany. The central arcaded hall is of steel frame construction, inclosed in brick and finished in stucco, and is an adaptation of a method that originated with ourselves. The exterior brickwork is stuccoed in the German manner, and the whole is frescoed with handwork—no stencils being employed—in a manner to which our illustration does not do justice. The wooden framework seen on the exterior is all part of the construction. It is filled in with brick and plastered flush with the timber. The interior roof construction is a study from which we could profit for all time if the building could always remain where it is. The roof is covered with hand-made glazed clay tiles in many colors and designs. Altogether the building is the most valuable contribution to the Fair that has been made by any foreign government.

ASSOCIATION NOTES.

KANSAS CITY CHAPTER, A. I. A.

At the June meeting of Kansas City Chapter of the American Institute of Architects, held the 3d inst., Mr. F. E. Hill read a paper aimed to set the southwest, the cyclone, and architecture right before the world. That section of the country, and especially Kansas, he argued, has an undeserved reputation for heavy winds because the winds there encounter a class of buildings loosely thrown together, with no attention paid to masonry or superstructure, and not the outgrowth of an architect's brain. The stories told of storms in that section often border on the miraculous; but close investigation, says Mr. Hill, shows that they are no severer than those of other sections of the country and Europe. The lesson he draws is that the southwest should give more attention to the methods of construction which are practiced in older communities here and abroad. The building law of Kansas City is up to standard, says Mr. Hill, and had the present law been observed prior to 1886 the cyclone of that year would not have disturbed, or at least destroyed, a single building in the city. Farmers are the ones especially urged by Mr. Hill to take precautions in the construction of their homes if they would escape death and disaster.

MOSAICS.

Richard J. Murphy, who has held the office of press secretary of the Columbian Exposition since the establishment of the bureau and to whose practical ability and genial presence much of the success of the newspaper department is due, has resigned the office and will become acquainted with architects as a member of the firm of Joseph Sherwin & Co., the structural contractors. The firm is located at Room 140 in the Adams Express building, Chicago, are members of the Builders' and Traders' Exchange, and are recommended to architects when calling for estimates. Mr. Murphy is a gentleman worth knowing.

The July *Century* contains Mr. George Kennan's reply to the recently published defense of Russia made by the Russian Secretary of Legation at Washington. The illustrated articles in this number include a description of "The Most Picturesque Place in the World," by Mr. and Mrs. Joseph Pennell,—the name of the place not being disclosed; Edmund Gosse writes of the famous actress, Sarah Siddons, and Salvini tells some interesting stories in his autobiography; John La Farge writes of the art of the Japanese; "Famous Indians" are described, with reproductions of notable medallion portraits by Olin Warner; Thomas Bailey Aldrich tells of some quaint old Portsmouth characters; an article on the World's Fair contains a great number of interesting engravings including a full-page picture by Castaigne of the MacMonnies

fountain; and a delightful article by Mrs. Oliphant on "The Author of 'Gulliver'" contains portraits of Dean Swift, "Stella," Sir William Temple, and others. Dr. Allan McLane Hamilton's article on "Mental Medicine," in which he discusses "The Treatment of Disease by Suggestion," shows a leaning toward a scientific form of mind-cure. A story by Arlo Bates, "The Intoxicated Ghost," is a novel treatment of an old theme.

A NOTICEABLE sign of progression, especially in the residence districts, in Chicago, is the disposition to remove the wooden sidewalks and replace them with cement. This style of walk has become so common around new buildings, particularly hotels and apartment houses, as to almost entirely take the place of stone. This is owing to the extra durability and also because of the honesty with which the work is done by the Western Cement Paving Company, whose offices are at 508 Opera House building, Chicago. There is no better sidewalk obtainable than that laid by this company.

ARCHITECTS visiting Chicago and wishing to locate near the Exposition grounds cannot do better than to engage rooms at the World's Inn, a fireproof hotel of eight hundred rooms, conducted upon the European plan, located at the corner of Madison avenue and Sixtieth street. This is close to the Sixtieth street station of the Illinois Central Railway and is near one of the entrances to the grounds. An excellent café is connected with it, and as all is under the management of one of the famous Lelands the World's Inn cannot fail to give the greatest satisfaction. The rate is a uniform two dollars per day.

VISITORS to the Congress of Architects cannot spend an hour more profitably than in the inspection of the ceramic mosaic floors and Lustre ceramic mosaic walls and ceilings in the Auditorium Hotel Annex and the special ceramic mosaic floor just placed in the Chicago Athletic building. Both buildings have many points of interest, as the work done in the hotel is the first of its kind done in this country. It was placed by the Henry Dibblee Company, of Chicago, and as their salesrooms, at 150 Michigan avenue, almost adjoin the Athletic building the visit might be made more profitable by calling there and asking for a member of the firm to direct the inspection.

UNDER the floor of the Mining building, at the Columbian Exposition, is a compact model pumping station which visitors never see. It is accessible only from a small door in the outside wall of the building placed out of the ordinary path of spectators. This station pumps water through the sewerage system of the Exposition and has a capacity of 5,500 gallons a minute. It is furnished with three centrifugal pumps of the Gould type, one of 4,000 gallons capacity, one of 2,000 gallons capacity, and one of 600 gallons capacity. The largest pump is driven by a 35 horse-power motor, the middle-sized one by a 20 horse-power motor, and the smallest by a 10 horse-power motor. The small pump is for use when but little work is needed, the medium-sized one for ordinary occasions, and the large one for emergencies.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than $5,000 are not published.

Chicago, Ill.—Architect W. T. Lesher: For Maurice Jones, on Dearborn street south of Thirty-eighth street, a three-story store and apartment house; size 25 by 85 feet; to have a front of Bedford stone, interior finish in white pine, oil finish, all the modern plumbing, bells, tubes, heating, etc. For Adam Senfert, on North avenue, west of Kedzie avenue, a three-story and basement store and flat building; size 25 by 86 feet; to have a handsome stone front, No. 1 clear white pine finish, and the modern plumbing; cost $15,000. For P. Dawson, on Superior street west of Franklin street, a three-story and basement flat building; size 24 by 76 feet; to have a pressed brick and stone front, and the best of modern improvements. For S. W. Roth, on Lake street, west of Parker place, a three-story and basement store and flat building; size 30 by 66 feet; to have a pressed brick and stone front, all modern improvements, bells, tubes, etc. For same owner, on Carroll avenue west of Central Park avenue, a three-story and basement flat building; size 30 by 66 feet; to have a front of pressed brick with stone trimmings, all the modern plumbing, etc. For S. W. Roth, on the northwest corner of Harding avenue and Lake street, a three-story and basement store and apartment building; size 58 by 125 feet; to have a handsomely designed front of stone and pressed brick. All the modern improvements will be put in; the cost will be $40,000. For August Schaefer, at 965 North Clark street, a four-story hotel; 50 by 84 feet in size; to be of pressed brick and stone front, have electric light, hardwood finish, the best of sanitary and modern conveniences, steam heating, etc.; cost $25,000.

Architect J. A. Bongard: For Charles Winter, on Seminary avenue, a three-story flat building; size 22 by 60 feet; to have a stone front, Georgia pine interior finish, bathrooms, closets, mantels, etc.

Architects Hallstrom & Peterson: For C. A. Youngquist, on Grand place and Garfield avenue, a three-story and basement flat building; size 22 by 50 feet; to be of pressed brick and stone front, have all the sanitary improvements, hardwood finish and mantels. For John Hallbeck, on Seminary avenue, near School street, a three-story flat building; size 24 by 50 feet; to be of pressed brick and stone front, have bathrooms, closets, mantels, etc.

Architects Turnbull & Postle: For Samuel Harris, at 945 Jackson boulevard, a two-story residence, 29 by 53 feet in size; to be of rockfaced stone basement and pressed brick front; have hardwood finish and mantels, the best of plumbing and hot-water heating. Also two-story brick barn.

Architects Snyder & Nothnagel: For G. F. Phegley, at 1398 Jackson boulevard, a two-story flat building; size 24 by 54 feet; to have a stone front, the best of sanitary and modern improvements, electric bells, speaking tubes, furnace heating, hardwood finish and mantels.

Architect W. H. Drake has completed drawings for the medical school to be erected on Dearborn street south of Twenty-fourth street, for the Northwestern University; it will be a four-story and basement building, 106 feet deep and 68 feet wide; have a pressed brick and stone front, steam heating, electric light and all improvements.

Architect J. M. O. Van Osdell: For Charles E. Rector, on Oakenwald avenue near Forty-sixth street, a four-story apartment house, 50 by 100 feet in size; to have a front of pressed brick, stone and terra cotta, heating, etc.; cost $40,000.

Architect H. T. Park: For W. P. Ketcham, on the northwest corner of Central Park avenue and Adams street, a three-story apartment house, 81 by 134 feet in size; to be of pressed brick and stone front, have all improvements and cost $50,000. For Doctor Peckinbaugh, on Washington boulevard west of Garfield Park, a four-story Sanitarium, 40 by 57 feet in size; to have a front of pressed brick and stone, the best of sanitary improvements, heating, etc.

Architect S. S. Beman: Making drawings for the Chicago Naval Academy, to be erected on South End Park between Fifty-first and Fifty-second streets; it will be a three-story and basement, 150 by 225 feet in size; to be of pressed brick, stone and terra cotta; will put in gymnasium, bowling alley, billiard room, machine shop, etc.

Architect Joseph Bettinghofer: For Frank Deppe, at 1163 Clark street, a three-story and basement flat building, 25 by 74 feet in size; to be of stone front, have all improvements, and cost about $15,000. For G. Roth, on Menomonee street, a four-story and basement store and flat building, 56 by 47 feet; to be of stone and pressed brick front, first story to be of stone; to have all sanitary improvements, mantels, etc. For Peter Colljung, at 103 Orchard street, a three-story and basement flat building, of pressed brick and stone front; to have all the sanitary improvements. For Henry Heers, a two-story and basement flat building; to be of pressed brick and stone front and side, and have all the sanitary and modern improvements. For Jacob Thurness, at 39 Kemper place, a three-story and basement flat building; to be of pressed brick and stone front, have sanitary, plumbing, etc. For F. Schneider, on Belmont avenue, a frame house; to have all the improvements.

Architect George Grossing: For A. J. Koch, at 894 Walnut street, a three-story flat building; to have a stone front, oak interior finish, etc. For Dennis Considine, at 1385 Fulton street, a three-story flat building; to have a stone front, oak finish, sanitary improvements, heating, etc. For A. V. Weiss, a three-story addition to building, on Whipple street near Van Buren; to be of stone front, have mantels, plumbing, laundry tubs, etc.

Architects Ruehl & Gatterdam: For Henry Richard, on Turner avenue near Ogden avenue, a two-story flat building; to have a stone front, hardwood finish and mantels, bathrooms, closets, etc. For Thomas Rowan, at California avenue near Ogden avenue, a three-story and basement flat building, 50 by 62 feet in size; to be of stone front, have all the modern sanitary plumbing, mantels, etc. For Nic Hartmann, on Madison street near West Forty-third street, a three-story and basement store and flat building; to have a pressed brick and stone front. For M. Spillane, on Jefferson street near Wilson avenue, a three-story store and flat building; to have a pressed brick and stone front.

Architects Kley & Lang: For Arnold Landgraf, on Richmond street, near Lenwood avenue, a two-story and basement flat building; to be of pressed brick and stone. For August Lindemann, at 520 West Division street, a three-story and basement store and flat building; to have a front of stone and pressed brick. For Emmaus Congregation, on Harvard street near Kedzie avenue, a two-story and basement school and flat building; to be of pressed brick and stone front. For John Hansen, on Mariana Place, a three-story and basement flat building; to have a front of pressed brick and stone. For T. Frieshke, on Leavitt street near Division street, a three-story and basement flat building; to be of Connecticut brownstone and St. Louis pressed brick. For Lutheran church, at Willow Springs, German congregation, a frame church, 34 by 58 feet in size; to have a stone basement, galvanized iron ceilings, stained glass windows, pews, plumbing, etc. For John H. Piper, on Walnut street, near California avenue, a two-story and basement flat building; to have a front of Bedford stone and St. Louis pressed brick, hardwood interior, bathrooms, closets, mantels. For T. H. Lyons, a two-story and basement store and hall building; of pressed brick and stone, corner of Holt street and West North avenue. For Herman Juhnke, at 355 West Erie street, a four-story and basement store and flat building; of pressed brick and stone front, with copper bays, all sanitary improvements, mantels. For Fritz Kay, at 732 Girard street, a three-story flat building; of pressed brick and stone front, to have bathrooms, closets, mantels, laundry tubs, etc.

Architects Marston & Hotchkins: For Thomas Ryan, at Sheridan Park, Ravenswood, a two-story basement and attic residence, 30 by 50 feet in size; to be of pressed brick and stone front, have hardwood finish and mantels, electric light, heating, laundry tubs, etc.; cost about $10,000.

Architect J. L. Merriam: For B. S. Allen, at 223 South Leavitt street, a two-story and basement flat building, 25 by 56 feet in size; to be of pressed brick and stone front, have all the modern improvements, and cost about $8,000.

Architects Ostling Brothers: For Mrs. Catherine Twick, at Cathalpha street near Southport avenue, a two-story and basement residence, 27 by 50 feet in size; to have a stone front with slate mansard roof, hardwood finish and mantels, the best of open plumbing, heating, laundry tubs, etc. For M. Lindholm, making plans for a three-story and basement apartment house, 21 by 58 feet in size; to be erected on Seminary avenue near School street. It will be of rockfaced stone basement, and above of brick; all the sanitary and modern conveniences will be put in. For Mrs. Berry, on Deming court near Larrabee street, a three-story and basement flat building, 27 by 80 feet in size; to be of stone front, have hardwood finish, all the sanitary improvements, heating, etc.; cost about $15,000.

Architect C. W. Nothnagel: For McColby Brothers, of Chicago Heights, six two-story frame houses, 22 by 42 feet in size; some will have stone basements, some brick and others on posts.

Architect Theodor Lewandowski & Co: For Joseph Schweda, on Ashland avenue near Milwaukee avenue, a four-story flat building, 22 by 85 feet in size; to have a front of pressed brick and stone, sanitary plumbing, etc. For Mueller & Scholer, on Clifton avenue, a four-story and basement apartment house, 72 by 134 feet in size; to have two fronts of pressed brick, stone and terra cotta, the best of modern plumbing, electric light, etc. For the Diehl Brewing Company, at Defiance, Ohio, a six-story brewhouse; to be of pressed brick and stone front; also, six-story stockhouse, 117 by 50 feet in size; washhouse, three stories; size 25 by 40 feet; to be of pressed brick and stone front, steel construction. Also making drawings for the British-American Brewing Company, of Windsor, Canada, for a brewhouse, to be four stories, and boiler house; size 25 by 50 feet; to be of pressed brick and stone front. For Nicholas Fagan, at Lincoln avenue, a two-story basement and attic residence; size 27 by 55 feet; to have a stone front, hardwood finish and mantels, the best of sanitary plumbing, etc.

Architect Julius Speyer: For. F. P. Dempsey, on Hoyne avenue, a three-story flat building, 25 by 70 feet in size; to be of pressed brick and stone front, have hardwood finish and mantels, and all the sanitary improvements. For P. Du-Pont, at Argyle Park, a two-story frame store and flat building; size 25 by 80 feet; to have a brick basement, the sanitary improvements, etc. Also, finished plans for a three-story flat building, 25 by 70 feet in size; to be erected on South Halsted street near Fifty-seventh; pressed brick and stone front and all improvements.

Architects Schroeder & Koster: For Richard Lyman, a three-story and basement, flat and store building; size 22 by 70 feet; to have a pressed brick and stone front, sanitary plumbing, mantels, etc. For Phillip Koehler, at Fifty-seventh street and Wabash avenue, a three-story and basement flat building, 50 by 70 feet in size; to have a cut stone front, sanitary improvements, hardwood finish, mantels, etc.

Architect C. F. Hermann: For Joseph Hess, at 515 Sedgwick street, a three-story store and flat building, 25 by 50 feet in size; to have a stone front, bathrooms, closets, mantels, etc.

Architect J. C. Brompton: For W. H. Schuler, at Dixon, Illinois, two two-story frame residences, 24 by 42 and 34 by 60 feet; to have hardwood finish and mantels, the sanitary plumbing, furnace, etc.

Architect E. H. Turnock: For B. F. Sweet, at Western Springs, a two-story basement and attic residence, 26 by 44 feet in size; to be of frame with stone foundation, have all the sanitary improvements and furnace.

Architect Julius H. Huber: For E. S. Hartwell, on Newport avenue, a two-story basement and attic residence; size 65 by 45 feet; to be of stone all round, have hardwood interior finish and mantels, heating, electric light, etc. For Mrs. Wagner, at 365 North Clark street, flat building; to be made into store building; pressed brick and stone, new plumbing, etc.

Architect A. G. Ferree: For Russell Brothers, on Louis street near Sixty-first street, Englewood, two two-story houses; to be of frame with stone basements, have bathrooms, closets, etc. For M. Harrower, on Sherman street near Seventy-fourth street, a two-story frame house; to have the modern improvements. For V. Hallam, on Center avenue and Seventy-fourth street, a two-story store and flat building; size 44 by 50 feet; to be of pressed brick and stone front, have bathrooms, closets, mantels, etc. For M. J. Flaws, on Ada

street near Sixty-third street, a two-story flat building, 84 by 56 feet in size; to have a front of pressed brick and stone, all the sanitary and modern improvements. For T. J. Conroy, on Ada street, a two-story flat building, 22 by 46 feet in size; to have a front of stone and pressed brick, bathrooms, closets, mantels, etc.

Architect W. K. Johnston: For J. L. Emerson, at Titusville, Pennsylvania, a two-story frame residence, stone basement, all the sanitary improvements, furnace, etc. For Thatcher M. Adams, of New York, a two-story frame cottage, 38 by 40 feet in size; to have stone basement, etc.

Architect Joseph P. Hettinger: For W. Eisfeld, on Southport avenue near Webster, a two-story store and flat building; size 24 by 52 feet; to be of stone basement and pressed brick and stone front, have all the sanitary plumbing, etc. Also at the same place for same owner, a two-story barn; size 45 by 45 feet; to be of pressed brick and stone front, etc.

Architects Huehl & Schmid: For Moody & Reed, a three-story addition to stable; to be of pressed brick and stone; size 25 by 180 feet; at 1399 North Clark street.

Architect James Burns: For P. J. Casey, on Indiana street, near Ashland avenue, a three-story stable; size 48 by 100 feet; to be of common brick. For the same owner, a three-story store and flat building; size 24 by 100 feet; to be of pressed brick and stone front, have all the sanitary improvements, mantels, etc.

Architect F. B. Townsend: For Mrs. Helen C. Adams, at Buena Park, a two-story basement and attic residence; size 30 by 55 feet; to be of frame with stone basement, have hardwood interior finish and mantels, laundry tubs, electric bells, speaking tubes, etc.

Architect C. H. McAfee: For William Fain, at the corner of Laflin and Thirteenth streets, a three-story and basement store and flat building; size 24 by 60 feet; to have a pressed brick and stone front, bathrooms, closets, mantels; cost $11,000.

Architects Handy & Cady: For Z. G. Simmons, at Kenosha, a two-story basement and attic residence; size 38 by 60 feet; to be of frame with stone basement, have hardwood interior and mantels, furnace, etc.; cost $10,000.

Architect J. N. Tilton: For estate of Thomas Suffern, on Augusta street, west of Robey, three two-story flat buildings; size 20 by 50 feet each; to be of stone fronts, have pine interior finish, and all the sanitary arrangements. For David Ryan, at 518 West Taylor street, a three-story and basement flat building; size 23 by 63 feet; to have a stone front, bathrooms, closets, mantels, hardwood finish, etc.

Cincinnati, Ohio.—Reported by Lawrence Mendenhall. It is extremely difficult to arrive at a satisfactory reason for the dull times existing in all branches of mercantile life. Theories are plentiful, but the true facts are still to be found out. Some cry "trusts," some "silver bill," some "tariff" and some "speculation." I am inclined to the last, and money, instead of flowing in the legitimate channels of trade, is diverted into another full of barriers, namely, that of making margins good. The building trade feels this withdrawal as soon as any branch, and both profit and cost are cut down in construction estimates. This is wise business policy and will produce a healthy tone to mercantile life. If it is a "survival of the fittest," let us arrive at that point in as easy a way as is possible. Let us *all* go on the principle that "we had better laugh than cry," or in other words, keep a cheerful countenance.

Architects Des Jardins & Hayward report plans for Gen. W. B. Shattuc, Madisonville, Ohio; materials: frame, shingle roof, hardwood, mantels, grates, furnace, stained glass, blinds, etc.; cost $10,000. Also, for the Sanitarium Company, College Hill, Ohio, a new building to replace the one destroyed by fire; materials: brick, slate and tin roof, steam heating, gas, plumbing, iron work, blinds, etc.; size 83 by 179; three stories; cost not given.

Architect A. O. Elzner has drawn plans for a residence for Hermann Goepper, Esq., Cincinnati, Ohio; materials: pressed brick, slate roof, furnace, stained glass, gas, plumbing, mantels, grates, blinds, etc.; cost $17,000.

Architects Crapsey & Brown report plans for a mortuary chapel at Waynesville, Ohio; materials: stone, slate roof, stained glass, marble tiling, hardwood finish, etc.; cost $10,000. For Monterey Industrial Company, Monterey, Mexico, five buildings, namely: saw mill, main building, warehouse, dryhouse and office; machinery will be wanted for the plant; cost $75,000. This speaks well for Cincinnati talent.

Architect A. S. James, Blymyer building, Cincinnati, Ohio, has prepared plans for a school building at Silverton, Ohio; materials to be brick, and building will be very substantial.

Architect G. W. Drach reports: For Mrs. M. Y. Schmidlapp, a double house; materials: pressed buff brick, slate roof, grates, mantels, blinds, gas, plumbing, etc.; cost not stated.

Architects Sweeney & Robinson report: For Mr. E. P. Heave, a residence; materials: frame, slate roof, furnace, grates, mantels, gas, plumbing, etc.; cost not stated.

Cleveland, O.—The financial depression is being felt by many Cleveland architects. Much work that was well under way has been stopped, the owners deciding not to go ahead until money matters have improved.

Architects Lehman & Schmidt report: The Central Police station for Cleveland, 125 by 160 feet in size, three stories and basement, of brick and terra cotta, slate roof, steam heat and gas light. The cost will be $100,000. The building will be built in two wings for cells, one for men and the other for women. The children's prison will be in the middle of the building. The balance of the building will be fitted with offices, police quarters and police courtroom. Work will be begun in the near future.

Architect George H. Steffens reports: Plans well under way for a residence, on Kensington street, for J. A. Bidwell; frame, 36 by 70 feet; slate roof, gas, hot-water heat, all modern improvements and hardwood finish; cost $16,000. A house, reaching completion, for J. C. Weideman, on Lake avenue, brick and frame, 45 by 75 feet, electricity throughout, hot water, hardwood finish and parquetry floors throughout.

Architects Coburn & Barnum report: A stone residence for which ground has just been broken, for Rev. Father Becker, at the corner of Woodland avenue and Brown street; 41 by 72 feet in size; slate roof, steam heat, gas; cost $14,000. They are also preparing plans for a Y. M. C. A. building, to be built for the Newburg Y. M. C. A., of brick and stone, three stories and basement; about 54 by 114 feet in size; slate roof, steam heat, electric light; cost to be about $25,000. The building will be fitted with a gymnasium, running track, offices, parlors, recreation and reading rooms, checkroom, association hall, committee and class rooms and storeroom on first floor.

Denver, Colo.—Architect H. T. E. Wendell; For Theo Halland, a two-story brick residence; size 40 by 40 feet; cost $6,000. For Jesse McDonald, a two-story dwelling; size 58 by 102 feet, brick; cost $2,000. Also, for A. S. Ripley & Son, a two-story business block; size 50 by 125; cost $20,000.

Architects Lee & Boal: For Steel & Shear, one two-story brick dwelling; size 35 by 44 feet; cost $7,000; and three two-story brick residences, 27 by 52 feet each; cost $18,000

Architect John Roberts: For A. M. Jacobson, repairs to business block; cost $13,000.

Architect J. G. Link: For O. B. Scoby, three two-story residences; size 28 by 39 feet; cost $15,000.

Architect W. P. Feth: For R. W. Flemming, a two-story brick residence; size 33 by 50 feet; cost $6,500.

Architect F. C. Eberly: For the Arapahoe Company, a one-story stone addition to county courthouse; size 100 by 210 feet; cost $110,000.

Architect E. Hodgson: For C. E. Thomas, a two-story brick residence; size 32 by 56 feet; cost $18,000.

Architects Jackson & Rivinius: For Mrs. E. F. Adams, a two-story double brick house; size 50 by 52 feet; cost $6,000

Architects Phillips & Thomas: For W. M. Wirt, a two-story residence, brick and stone; size 36 by 49 feet; cost $10,000.

Detroit, Mich.—Architect William S. Joy: For Warren & Farley, a terrace of three residences, three-story, brick with stone trimmings; to cost $18,000. Also a three-story brick and stone residence; to cost $10,000. For C. W. and W. B. O'Brien, a two-story frame residence; to cost $6,000.

Architect E. C. Van Leyen: For Patrick Spilance, a two-and-a-half-story brick residence; to cost $6,000. For the Coronado Beach Improvement Company, Tecumseh, Ontario, a three-story frame hotel; size 260 by 150 feet, with all modern improvements; cost $100,000. For John Greinel, two two-and-a-half-story brick residences, and remodeling house, at corner of Jones and Third streets; cost $18,000.

Architects E. A. Walshe & Son: For J. E. Clough, a two-and-a-half-story brick and stone residence; to cost $12,000.

Architect John R. Gentle: For self, a block of two-story frame houses; to cost $10,000. For W. W. Robinson, a two-story brick double residence; cost $9,000. For Mrs. Isaac Owen, a two-story brick residence; cost $7,000.

Architect A. E. French: For J. W. Noller, Claremont, Virginia, a large brick sawmill and power-house; cost $20,000. For Henry Williams, a two-and-a half-story brick residence; cost $5,000.

Architects Rogers & Macfarlane: For A. S. Brooks, a terrace of three-story brick houses; cost $30,000. For Dr. R. A. Jamieson, a two-story brick residence and office; cost $6,000.

Architects Donaldson & Meier: For William Crow, a two-story brick residence; cost $9,000. For Andrew McLellan, a two-story house; brick; cost $8,000.

Kansas City, Mo.—Architect Adriance Van Brunt: For the Garden City Normal School Association, a normal school building at Garden City, Missouri, of brick, three stories; to cost $6,000.

Architects Hogg & Rose: For F. G. Altman, F. J. Baird and E. Shukert, a three-story and basement business block, on Grand avenue, above Eleventh street, of brick and stone; to cost $35,000. In this combination building Mr. Altman will own forty-eight feet and the others twenty-four feet each.

Architects Vrydagh & Shepard: For G. A. Barton, a residence at Twenty-sixth street and Troost avenue, two stories and attic, of brick; to cost $15,000.

Architect G. M. D. Knox: For Rev. J. F. Lee, a residence in Armourdale, Kansas, two stories, of brick; to cost $7,000.

Architect A. B. Cross: For G. Blank, a store and dwelling at Napoleon, Missouri, two stories and basement, of brick; to cost $7,000.

Architects Matthews & Sanders: For the city of Warrensburg, Missouri, a city hall, two stories, of brick with stone trimmings; to cost $10,000. For E. W. Hayes, a residence at Fourteenth street and Garfield avenue, of brick and wood, two stories; to cost $6,000. For H. H. Stowell, a residence at Thirty-ninth street and Warwick boulevard, two stories, of brick; to cost $5,000. For J. A. Tucker, a frame residence at Florence, Kansas; to cost $5,000. For John Taylor, a brick addition to his dry goods store at Eleventh and Main streets, to cost $6,000.

Architect F. E. Hill: For Grace Church, an addition to the nave of the stone church at Thirteenth and Washington streets; of stone; to cost $15,000. For the Mount Cracker and Candy Company, a five-story and basement factory building at Ninth and Santa Fé streets; of brick; to cost $50,000.

Louisville, Ky.—Architects McDonald Brothers report the following: Church, near New Orleans; to cost $9,000; brick and stone. New car barns and sheds, for the Mobile Street Railway, Mobile, Alabama; to cost $50,000; brick and stone, metal roof. A two-story addition to courthouse, Owensboro, Kentucky; to cost $20,000; brick and stone. New dryhonse for the Weissinger Tobacco Factory, 60 by 120 feet in size; brick, metal roof; to cost $14,000; location, Floyd and Breckinridge streets. A frame office building for the Weissinger Tobacco Factory; to cost $5,500; 40 by 75 feet in size; shingle roof; Floyd and Breckinridge streets. Residence for Hon. J. H. Goodnight, Franklin, Kentucky; to cost $6,000; brick and stone. Alterations in county courthouse, Louisville, Kentucky; to cost $6,000.

Architects Clarke & Loomis report as follows: For Samuel Querbacker, a stone and brick residence, on Jefferson and Seventeenth streets; cost, $12,500. For the Irvin Estate, eleven frame cottages; cost, $12,200. For H. W. Barrett, a store and flat building between Second and Third streets, near Market, brick and stone; cost $6,800. For John Alexander, a three-story brick and stone residence; to cost $6,400. For Hon. A. E. Willson, a three-story brick and stone residence; to cost $11,000.

Milwaukee, Wis.—Architects Crane & Barkhausen: For C. Barkhausen, a two-story flat building; size 72 by 44 feet; cost $25,000.

Architects Ran & Kirsch: For Charles Abrisch, a two-story residence, frame and stone; to cost $6,000.

Architects Schnetzky & Siebert: For Edwards & Schueler, a two-story brick office building; size 43 by 150 feet; cost $10,000.

Minneapolis, Minn.—Architect Warren Hayes reports: Plans for a residence for H. B. Frey, on Twelfth avenue and Fifth street, S. E., 55 by 60 feet and two and one-half stories high; materials: gray jasper with copper roof, hardwood finish and all improvements; to cost $30,000.

Architects Orff Brothers & Joralemon report: Plans for a residence for J. A. Bohn, on Park avenue and Nineteenth street; to cost $15,000; will be of Kasota stone and Milwaukee brick; it will be of the Hanseatic style, 45 by 60 feet in size. Also, a country residence for J. B. Fergusson, near Lexington, Kentucky; to cost $40,000; will be of the Italian style, 46 by 127 feet in dimensions.

Architects Barnett & Record report: Plans for a grain elevator to be erected by the state of Minnesota at Duluth; 90 by 30 feet in size, with power-house 99 by 45 feet in size and 130 feet high; capacity 350,000 bushels.

Omaha, Neb.—Architect Henry Voss: For the Courtland Beach Association, a two-story pavilion; size 130 by 80 feet; frame; cost $12,000. For Henry Rucer, a one-story frame convention hall; size 75 by 75 feet; cost $10,000.

Pittsburgh, Pa.—Architect Sims: For the First National Bank of Wilkinsburg, a three-story bank building; to cost $27,000.

Architect J. E. Obitz: For Prof. Farner, a two-story residence, brick and stone; cost $15,000.

Rochester, N. Y.—Architect J. Foster Kelly has prepared plans for the Immaculate Conception church and school; brick and stone trimmings, basement for church society rooms; cost $30,000. Eight-room annex No. 22 School, corner Hayward and St. Joseph street; cost about $16,000. Block in Geneva, New York, for Messrs. O'Malley Brothers; 40 by 80 feet; cost $15,000. Addition to Catholic church, Geneva, New York. Residence at Albion, New York, for Mr. Landaur; cost $6,500.

Architects J. Fay and O. W. Dryer report the following: Block of four apartments for Mr. W. R. Challicu, on Alexander street corner Broadway; cost $5,000. Residence for Mr. Thomas Johnson on Arnold Park; style, French Renaissance; cost $20,000. Frame residence for Mr. Robert Liddle, Pasadena, California; cost $10,000. House for George Schaeffer. House on Argyle street for Mr. Charles M. Thoms, marble first story, frame above.

St. Louis, Mo.—Architects Beinke & Wees: For George F. Pickel, three three-story brick and stone residences; size 64 by 52 feet; cost $15,000.

Architect C. K. Ramsey: For D. Houser, a two and one-half story brick and stone residence; size 57 by 62 feet; cost $30,000.

Architects J. B. Legg Architectural Company: For city, a two-story police station, brick and stone; size 100 by 184 feet; cost $30,000. For A. Grove, a two story brick residence; size 28 by 45 feet; cost $7,000.

Architects C. W. Kellogg & Son: For F. M. Baldwin, three two-story dwellings; size 27 by 47 feet; brick and stone; cost $15,000.

Architect W. R. Morrison: For N. S. West, a one-story brick workshop; size 20 by 30 feet; cost $12,000.

St. Paul, Minn.—Architect William Kingsley reports: Plans for a row of tenement houses on the corner of Portland avenue and Dale street, for H. J. Conradt; to cost $33,000. There will be six three-story houses of brownstone and pressed brick. Also, plans for two tenement houses on Tenth and Olive streets, to cost $15,000 and $18,000 respectively. The materials will be stone and brick.

Architect C. R. Dewey: Has drawn plans for a store building on Sixth street near Wabasha; to cost $8,000; it will be of brick, stone and copper.

Architect C. H. Johnstone reports: Plans for a residence for William F. Graves, on Summit avenue near Victoria street; it will be of frame, 50 by 80 feet in size, three stories high and of the Colonial style.

Architects Reed & Stern report: Plans for a store building for P. Cummings, on Seventh street between Wabasha and Cedar; it will be of brick and stone, three stories high, 25 by 100 feet in size, and will cost $12,000.



NORWEGIAN BUILDING, WORLD'S COLUMBIAN EXPOSITION.

W. HAUSTEEN, ARCHITECT, NORWAY.



INLAND ARCHITECT PRESS.

IDAHO STATE BUILDING, WORLD'S COLUMBIAN EXPOSITION.

CUTLER & POETZ, ARCHITECTS, SPOKANE.



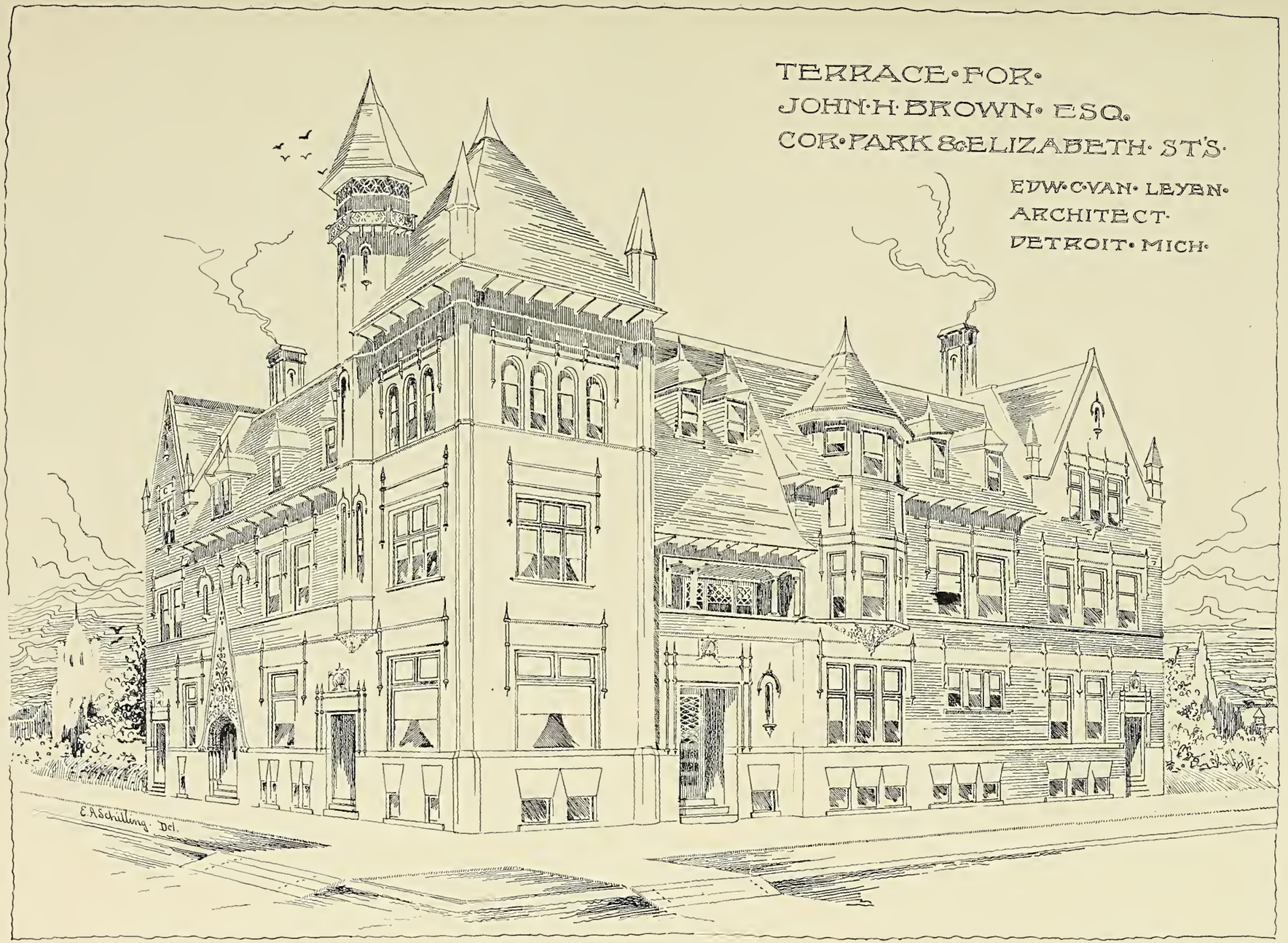
ST. STEPHENS ROMAN CATHOLIC CHURCH, PHILADELPHIA, PENNSYLVANIA.

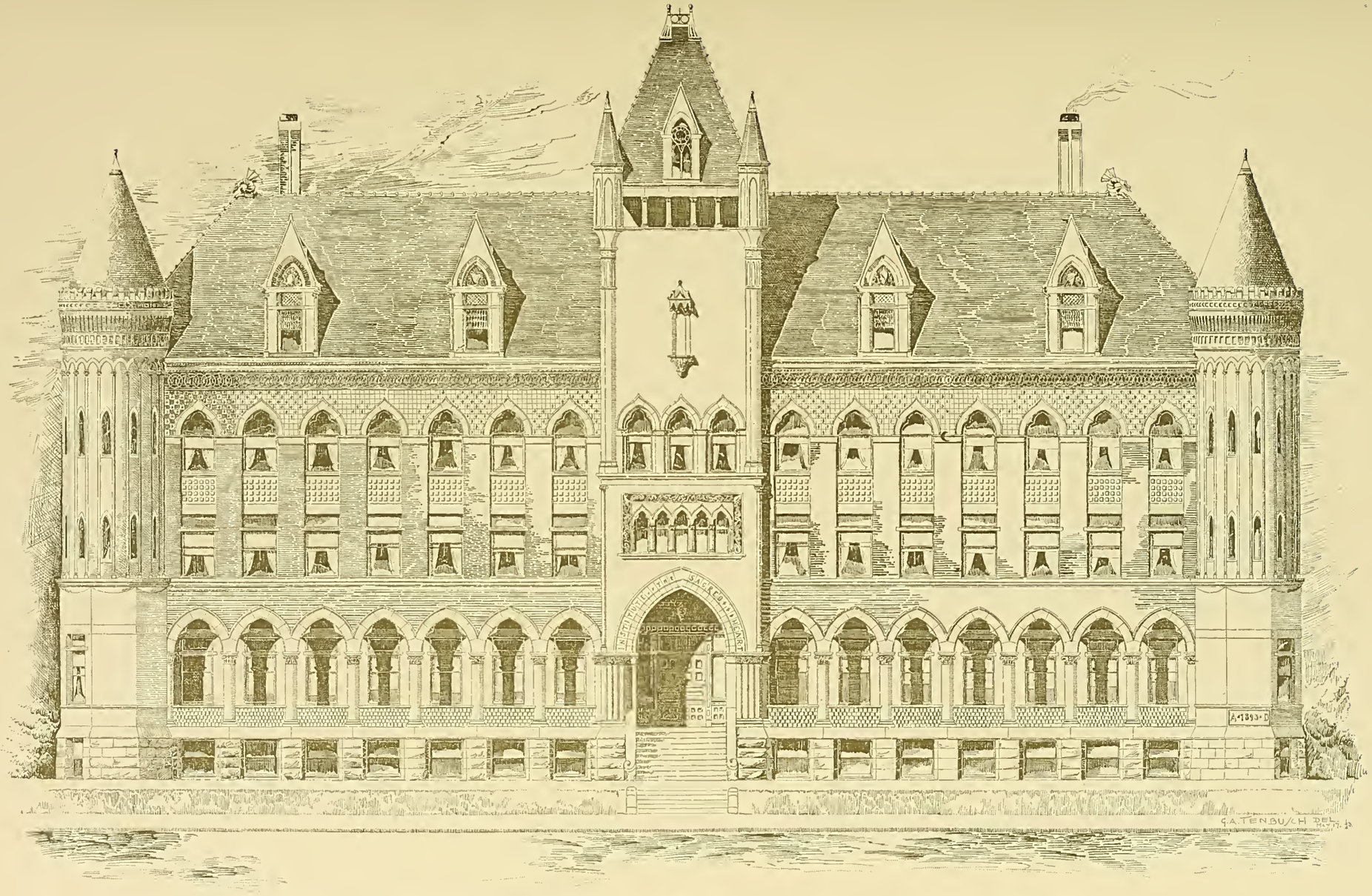
FRANK R. WATSON, ARCHITECT.



HOUSE FOR J. L. COCHRAN, EDGEWATER, ILL.

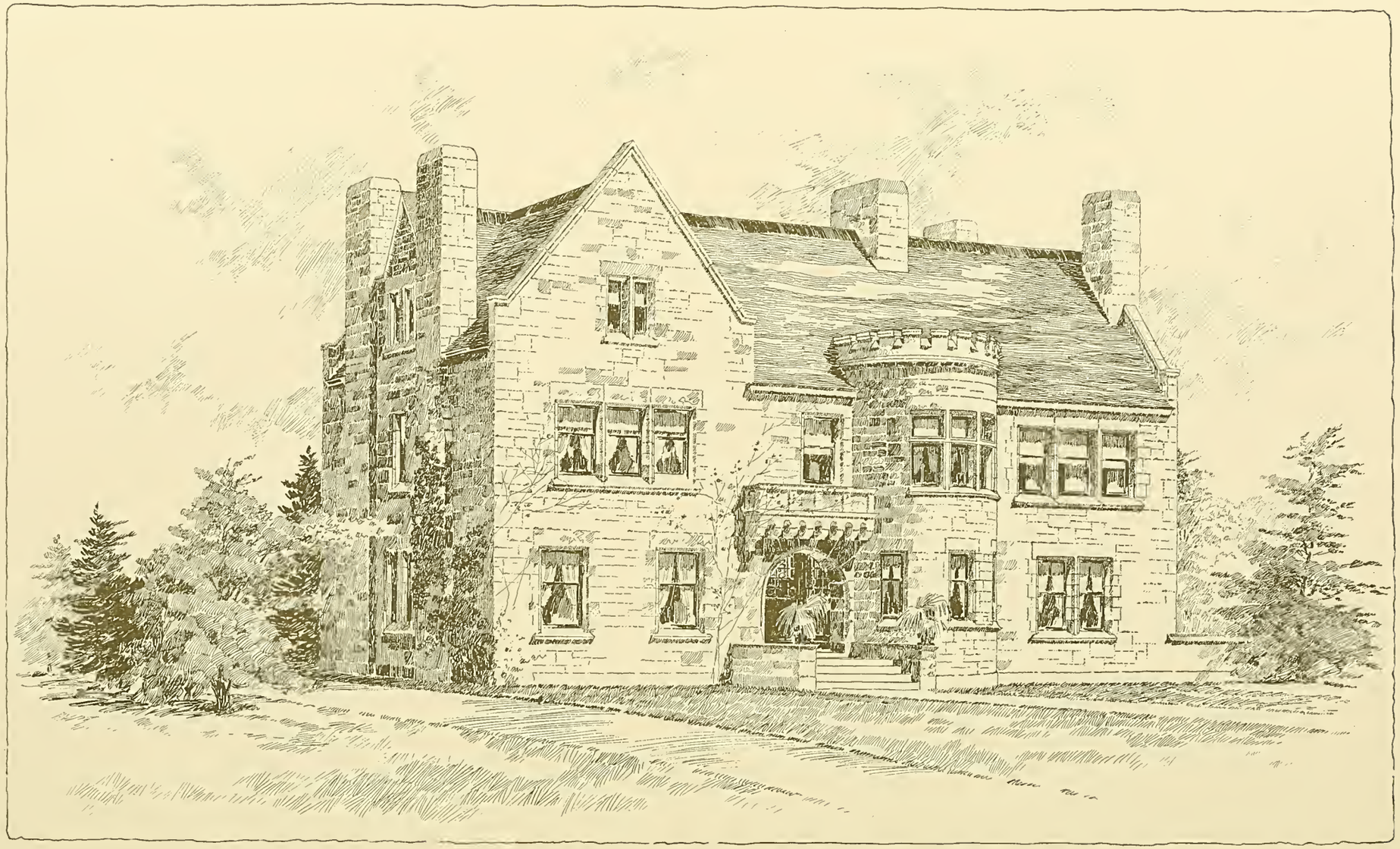
GEO. W. MAHER, ARCHITECT, CHICAGO.


TERRACE · FOR ·
JOHN · H · BROWN · ESQ.
COR · PARK & ELIZABETH · ST'S ·
EDW · C · VAN · LEYEN ·
ARCHITECT ·
DETROIT · MICH ·
E. A. Schilling · Del.



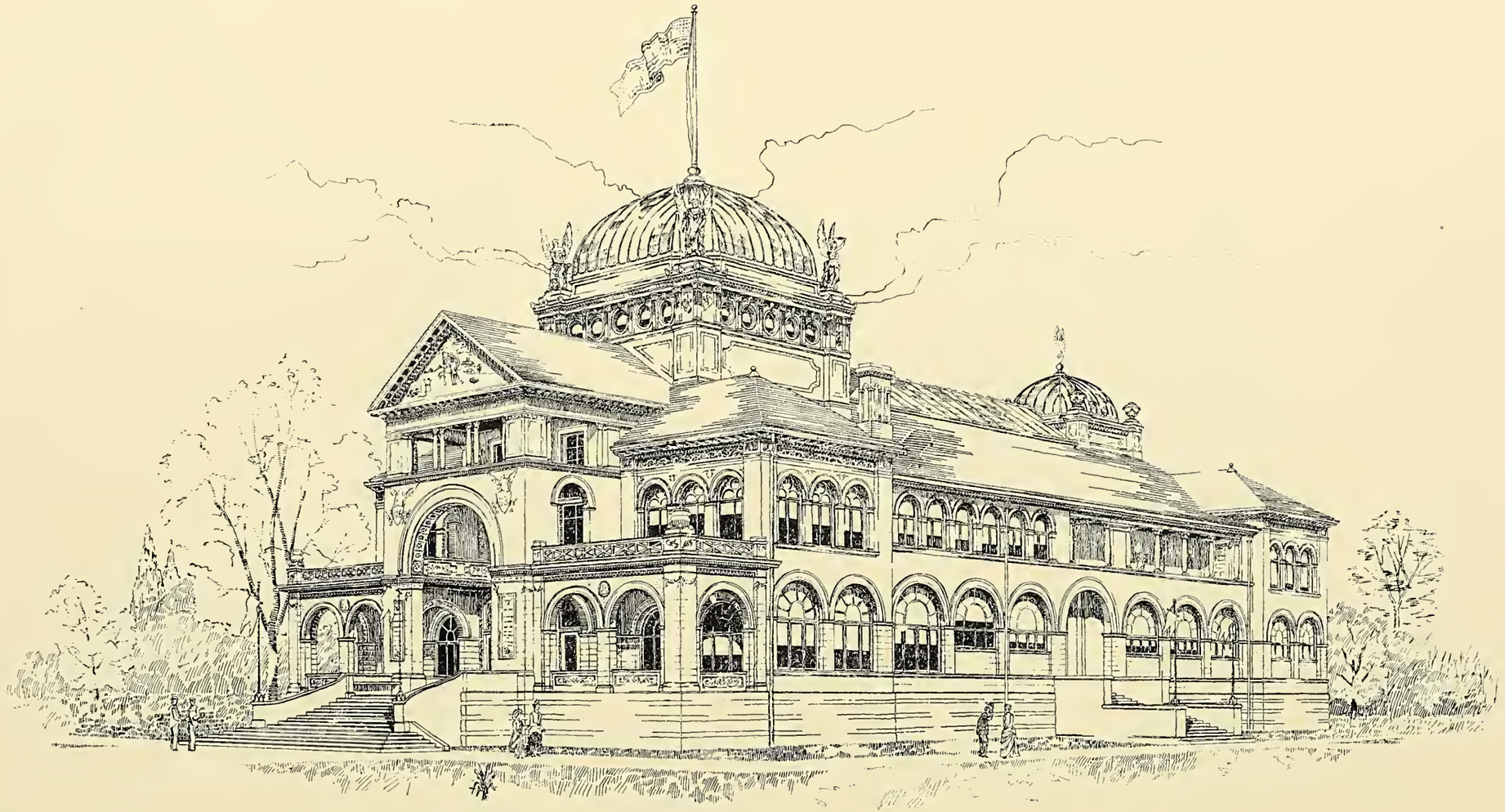
ACADEMY FOR THE SISTERS OF ST. BENEDICT, DULUTH, MINNESOTA.

G. A. Tenbusch, Architect.



RESIDENCE FOR H. K. HATCH, CLEVELAND, OHIO.

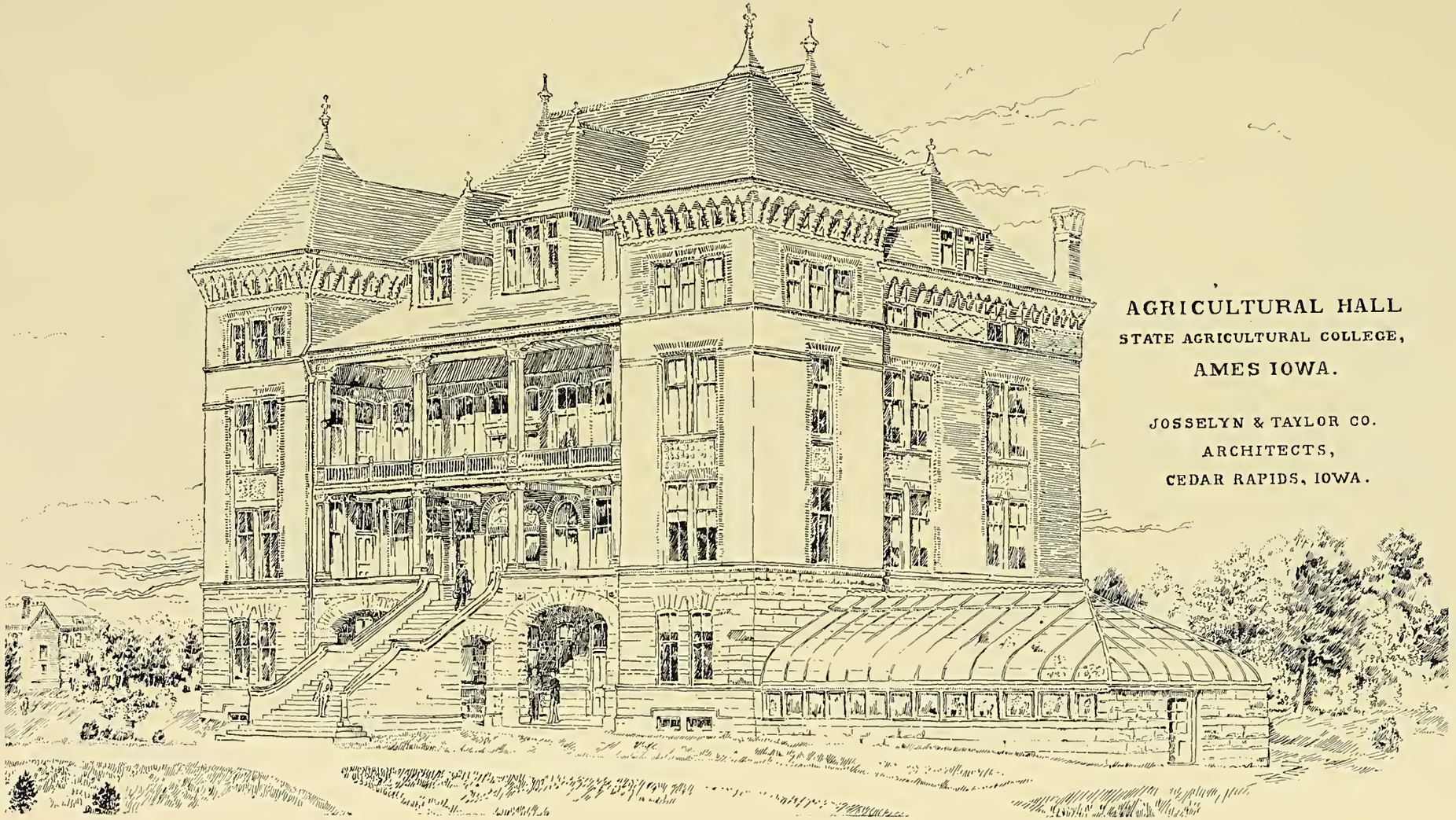
C. F. SCHWEINFURTH, ARCHITECT.



PREMIATED DESIGN FOR THE **IOWA STATE BUILDING** WORLD'S COLUMBIAN EXPOSITION

AS FIRST LOCATED

JOSSELYN AND TAYLOR CO. ARCHITECTS CEDAR RAPIDS IA.



AGRICULTURAL HALL

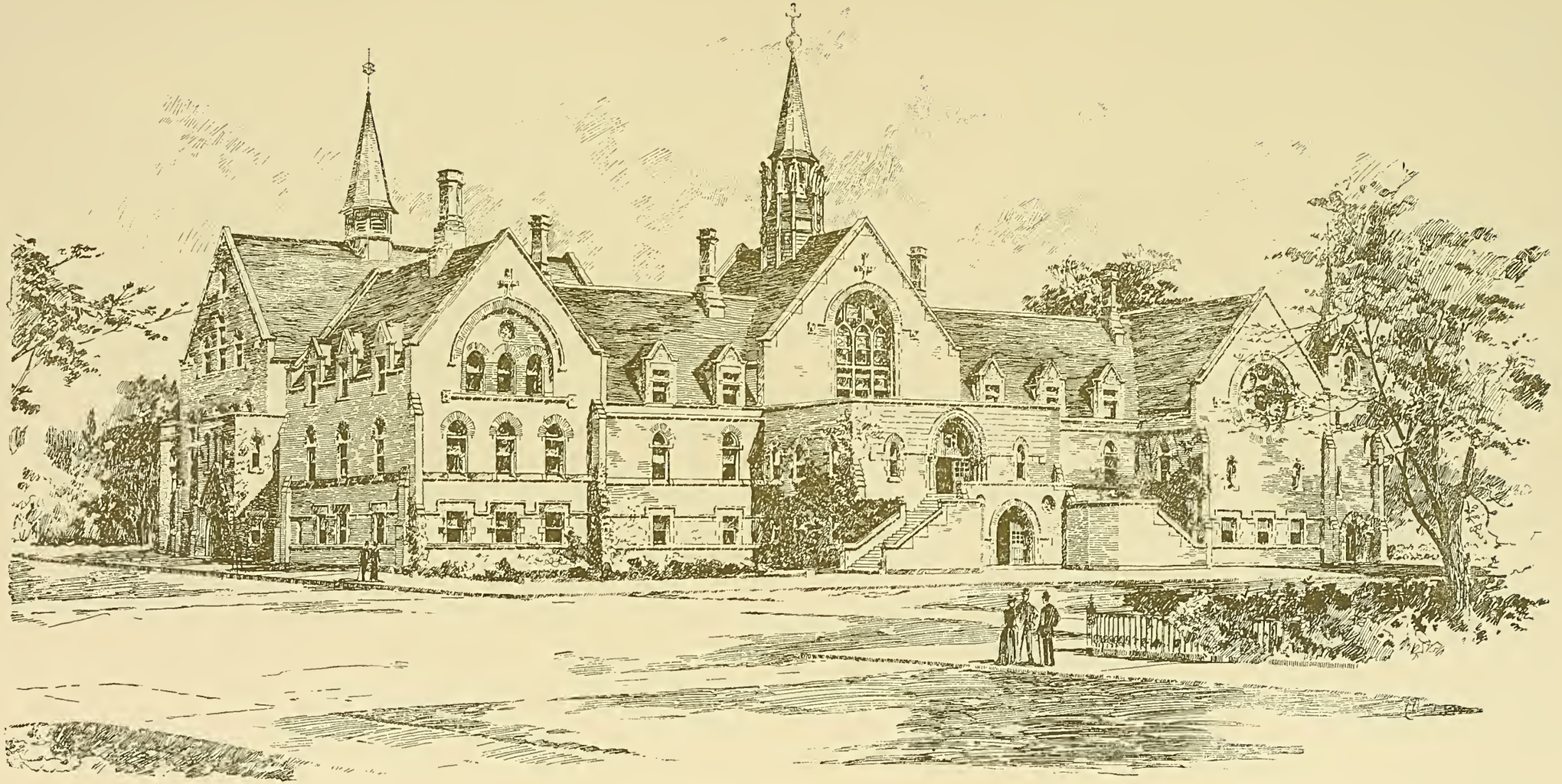
STATE AGRICULTURAL COLLEGE,

AMES IOWA.

JOSSELYN & TAYLOR CO.

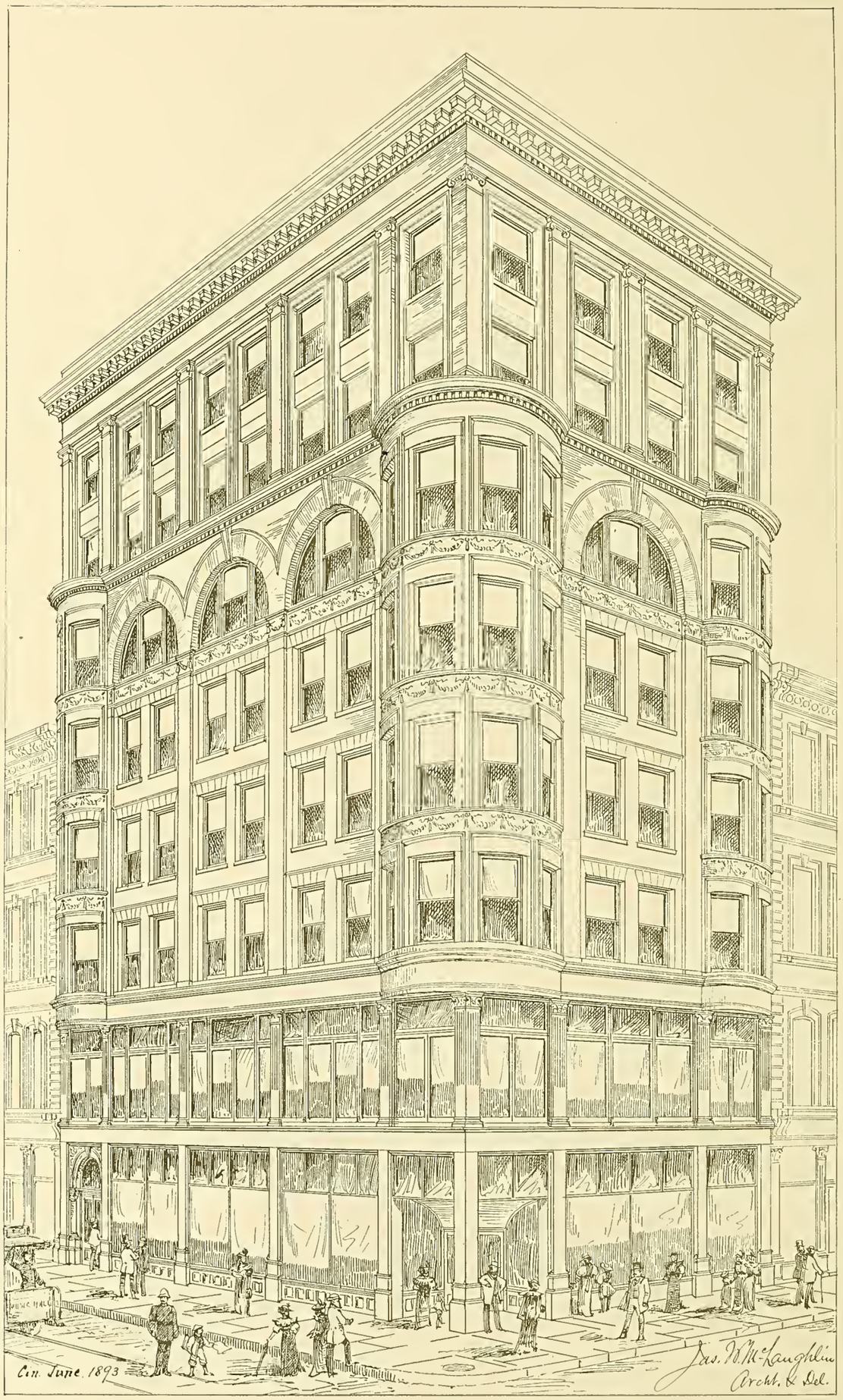
ARCHITECTS,

CEDAR RAPIDS, IOWA.



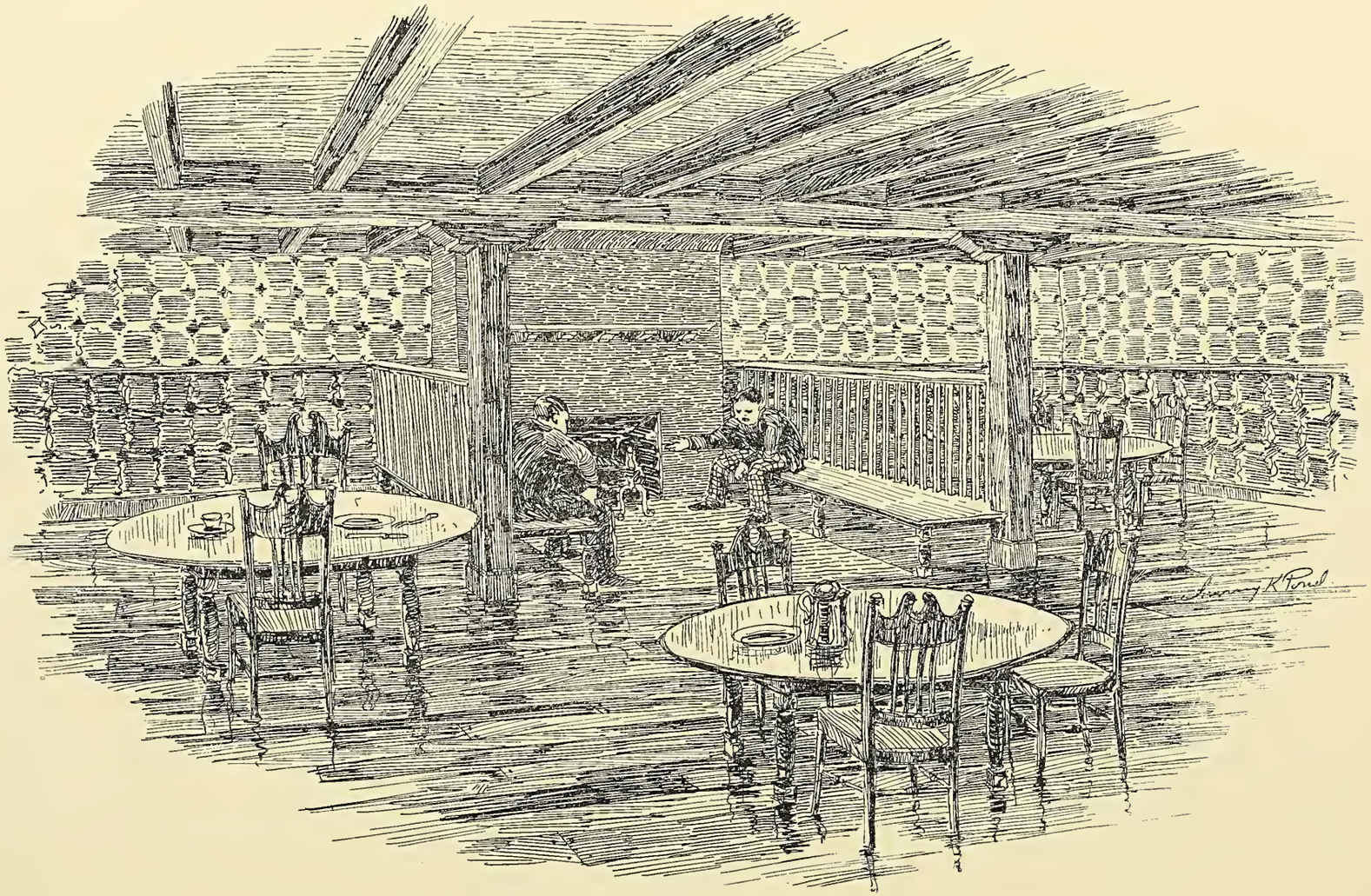
THE URSULINE CONVENT, CLEVELAND, OHIO.

C. F. Schweinfurth, Architect.



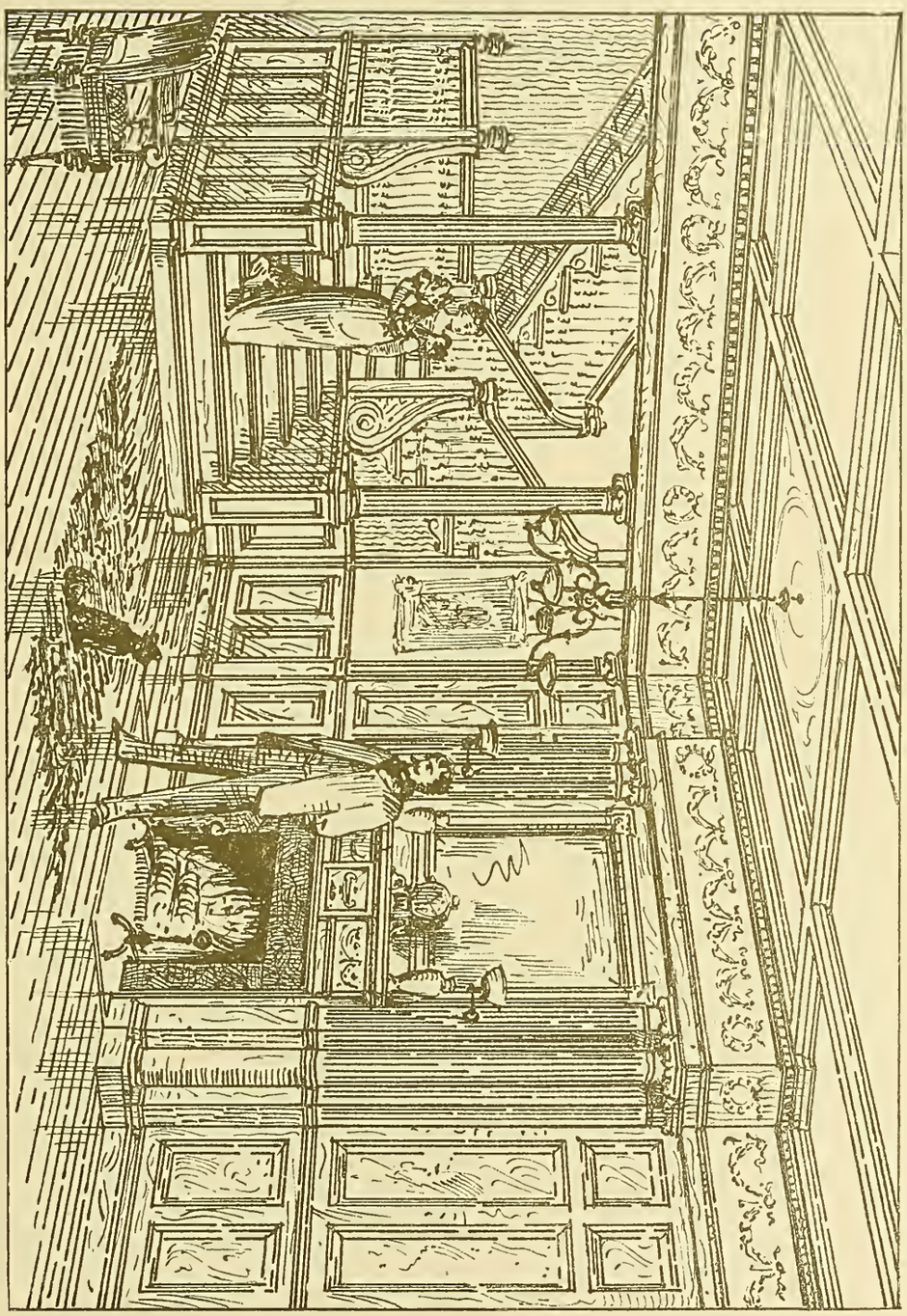
THE NEW RAWSON BUILDING, CINCINNATI, OHIO.

JAMES W. MCLAUGHLIN, ARCHITECT.



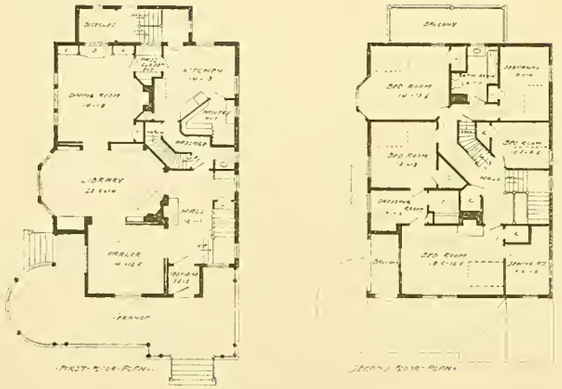


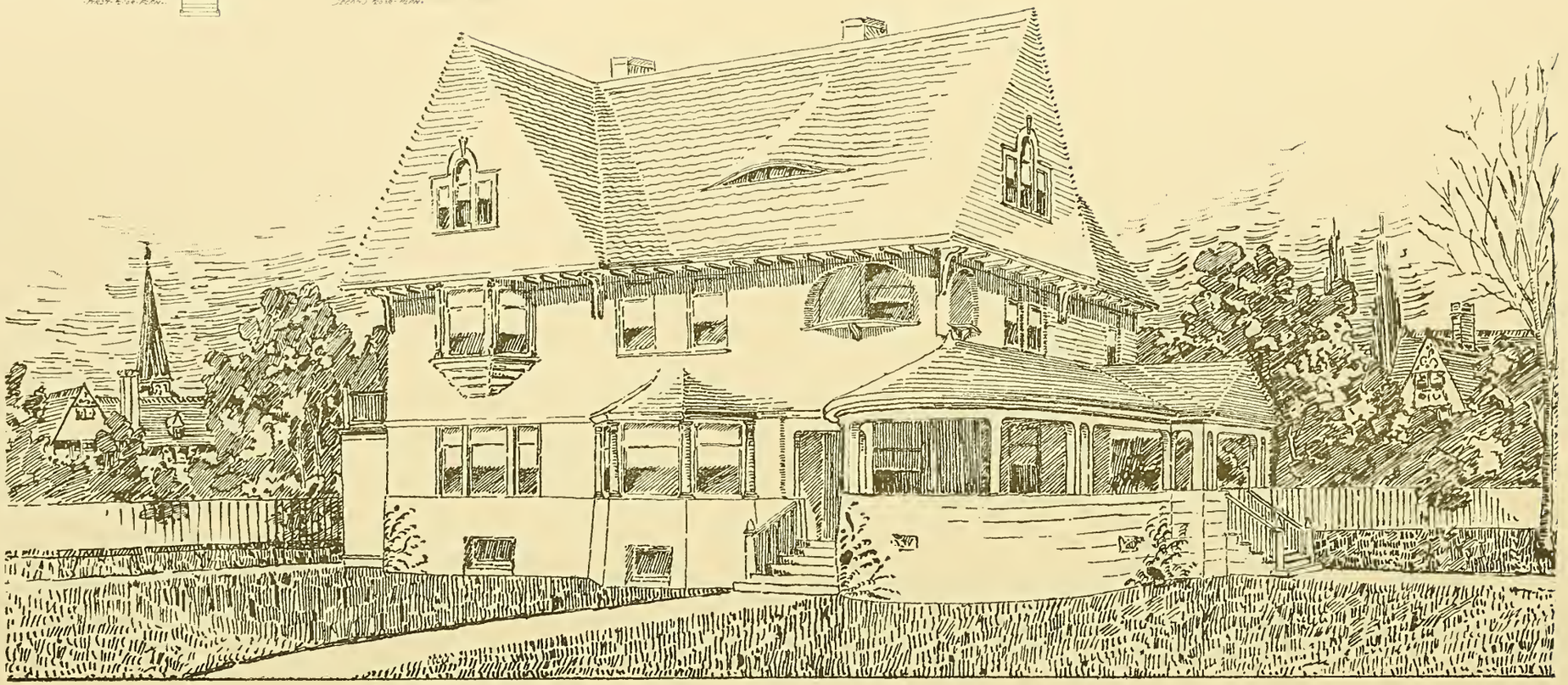
SKETCHES OF THE
EXTERIOR AND INTERIOR
OF THE "COFFEE HOUSE"
HULL HOUSE CHICAGO
POND AND POND
ARCHITECTS



VIEW IN HALL, RESIDENCE OF R. H. SHOEMAKER, CINCINNATI, OHIO.

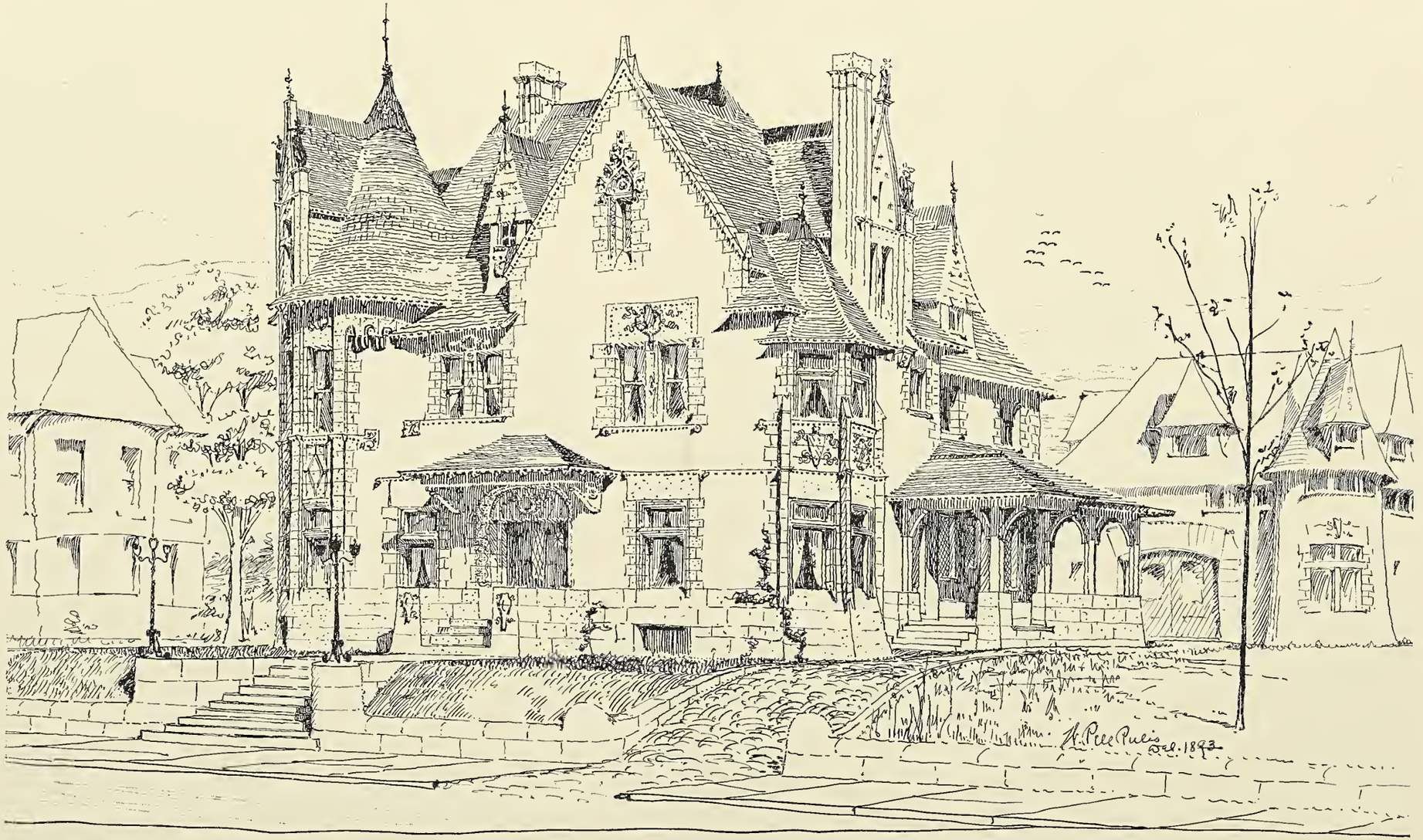
JAMES W. MCLAUGHLIN, ARCHITECT.





RESIDENCE FOR C. T. PURDY, OAK PARK, ILLINOIS.

PATTON & FISHER, ARCHITECTS, CHICAGO.



A. DENVER RESIDENCE
McCURDY & PULIS ARCHTS.
~INDUSTRIAL BL'D'G~



CHICAGO COLLEGE OF DENTAL SURGERY.

(Dental Department of Lake Forest University.)

WILLETT & PASHLEY, ARCHITECTS, CHICAGO.



HOUSE FOR HENRY D. BARBER, POLO, ILLINOIS.

J. L. Silsbee, Architect, Chicago.

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 01195 2462